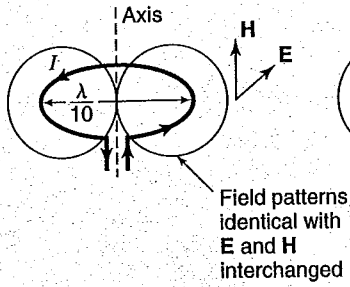


# BASIC ANTENNAS

## SMALL LOOP

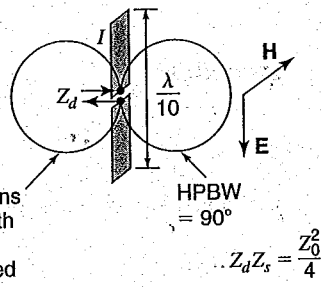
$$D = 1.5$$



(a)

## SHORT DIPOLE

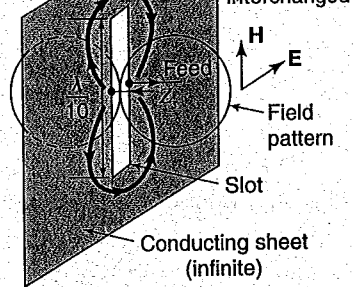
$$D = 1.5$$



(b)

## SLOT

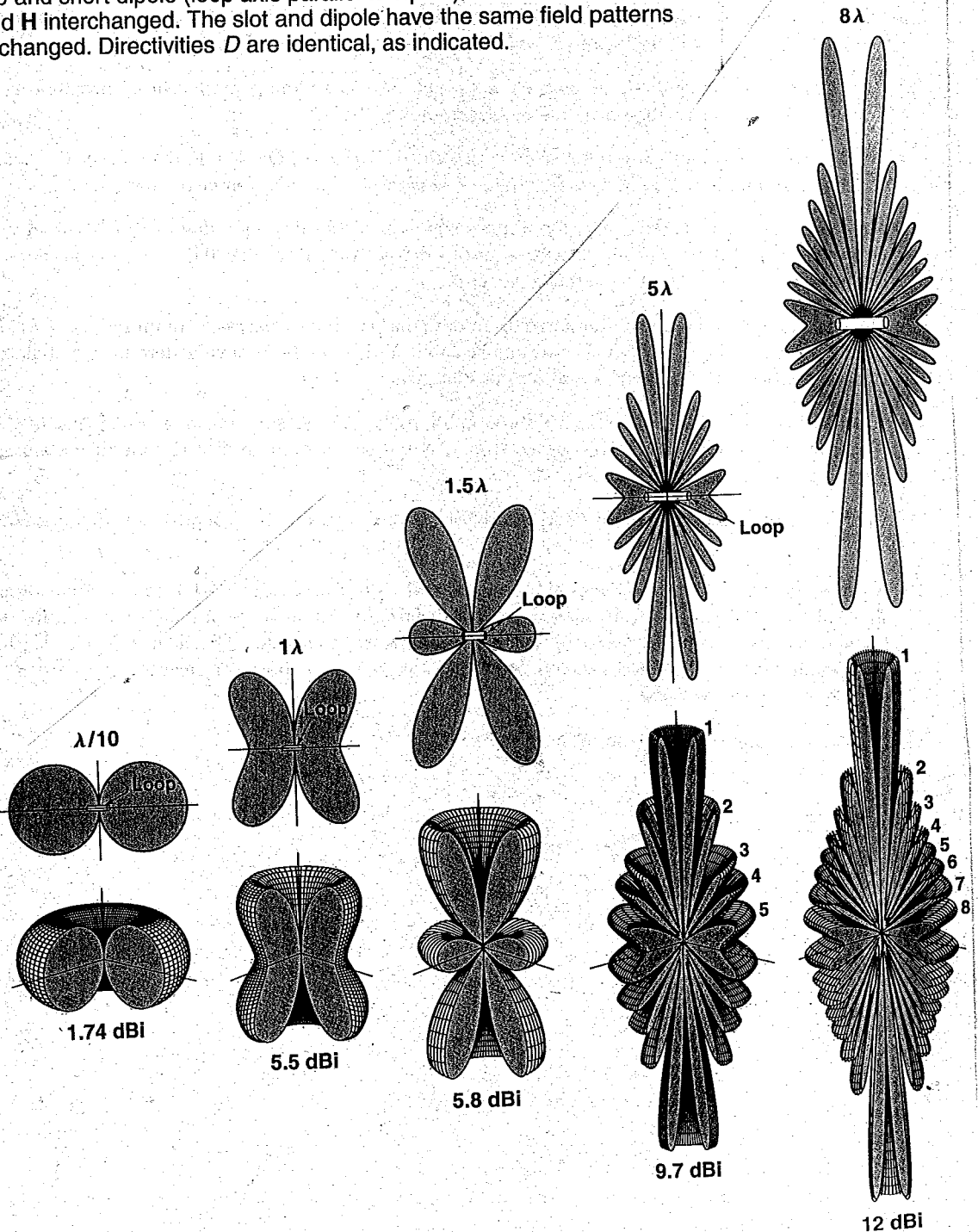
$$D = 1.5$$



(c)

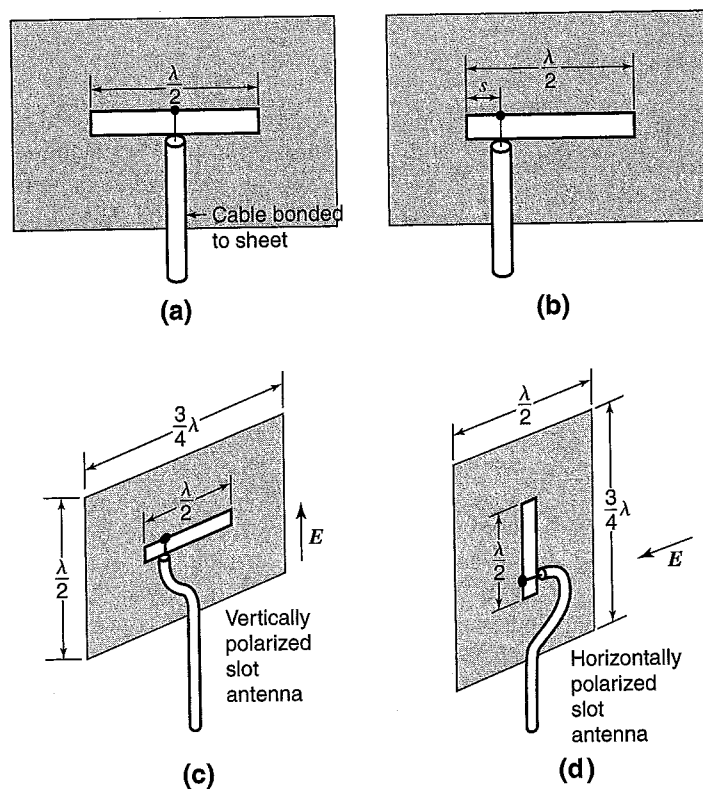
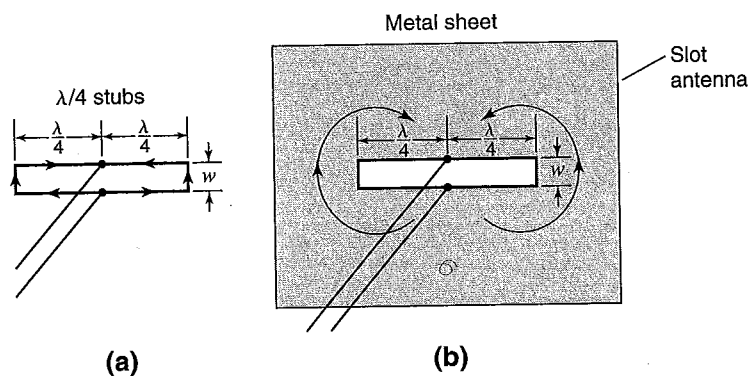
**Figure 3-1**

Three basic types of antennas: the small loop (a), short dipole (b), and slot antenna (c). The small loop and short dipole (loop axis parallel to dipole) have identical field patterns with **E** and **H** interchanged. The slot and dipole have the same field patterns with **E** and **H** interchanged. Directivities  $D$  are identical, as indicated.

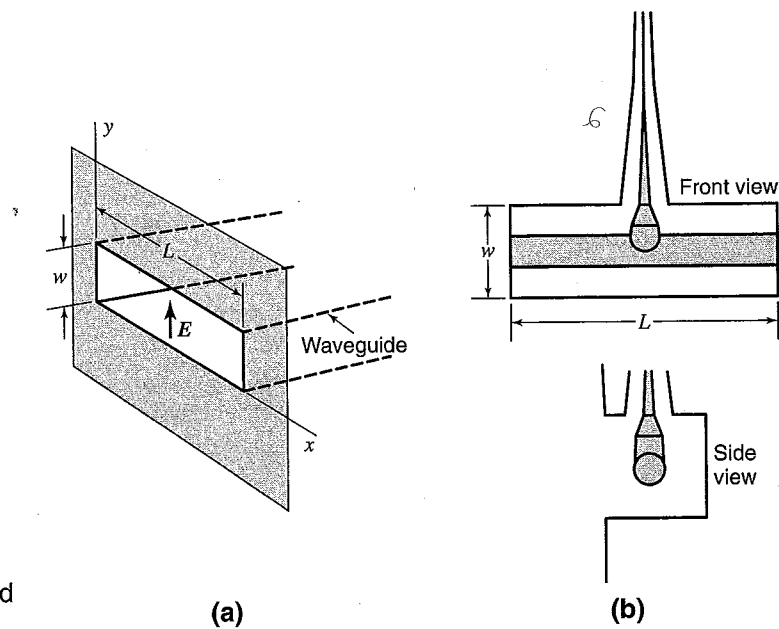


**Figure 9-1**

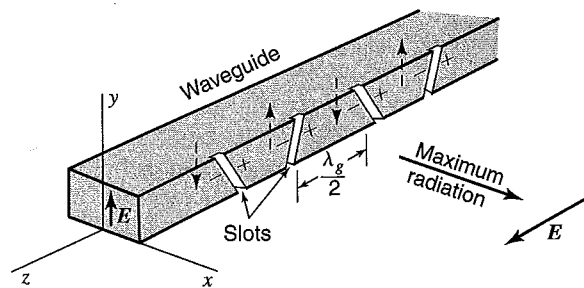
Whereas the stubs of (a) are a poor radiator, the slot of (b) is a good, efficient radiator because the currents can spread out on the metal sheet.

**Figure 9-2**

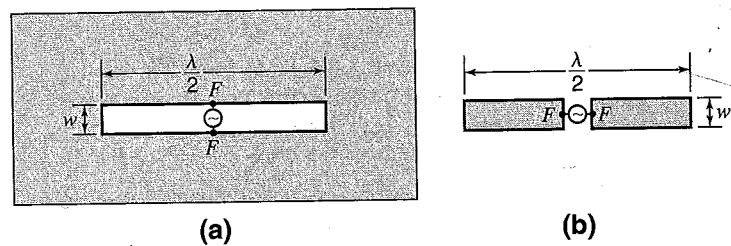
Slot antennas fed by coaxial transmission lines.



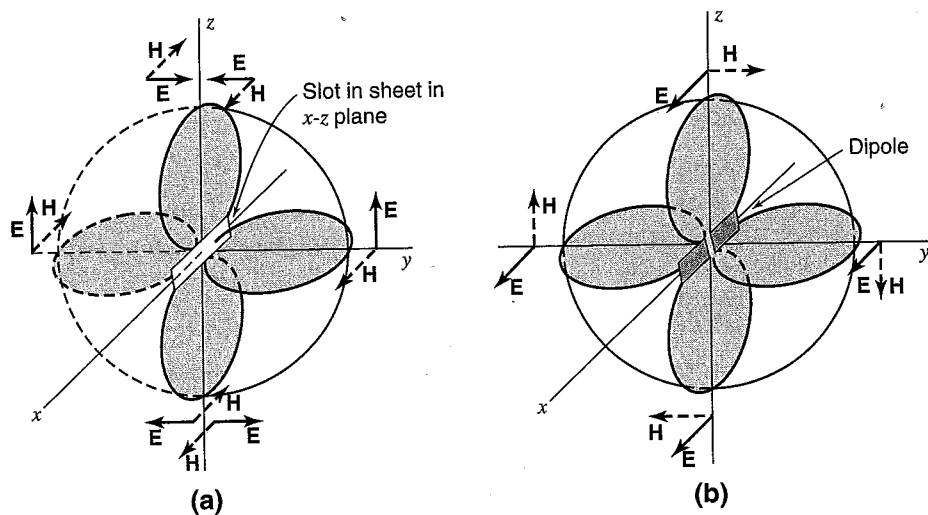
**Figure 9-4**  
Waveguide-fed slot (a) and T-fed slot (b).



**Figure 9-5**  
Broadside array of slots in waveguide.



**Figure 9-6**  
A  $\lambda/2$  slot in an infinite flat sheet (a) and a complementary  $\lambda/2$  dipole antenna (b).



**Figure 9-7**  
Radiation-field patterns of slot in an infinite sheet (a) and of complementary dipole antenna (b). The patterns have the same shape but with  $E$  and  $H$  interchanged.