TABLE 1-5   Boundary conditions on time-harmonic electromagnetic fields

	General	Finite conductivity media, no sources or charges $\sigma_1, \sigma_2 \neq \infty$ $J_s = M_s = 0$ $q_{es} = q_{ms} = 0$	Medium 1 of infinite electric conductivity $(E_1 = H_1 = 0)$ $\sigma_1 = \infty; \sigma_2 \neq \infty$ $M_s = 0; q_{ms} = 0$	Medium 1 of infinite magnetic conductivity $(E_1 = H_1 = 0)$ $J_s = 0; q_{es} = 0$
Tangential electric field intensity	$-\hat{n} \times (E_2 - E_1) = M_s$	$\hat{n} \times (E_2 - E_1) = 0$	$\hat{n} \times E_2 = 0$	$-\hat{n} \times E_2 = M_s$
Tangential magnetic field intensity	$\hat{n} \times (H_2 - H_1) = J_s$	$\hat{n} \times (H_2 - H_1) = 0$	$\hat{n} \times H_2 = J_s$	$\hat{n} \times H_2 = 0$
Normal electric flux density	$\hat{n} \cdot (D_2 - D_1) = q_{es}$	$\hat{n} \cdot (D_2 - D_1) = 0$	$\hat{n} \cdot D_2 = q_{es}$	$\hat{n} \cdot D_2 = 0$
Normal magnetic flux density	$\hat{n} \cdot (B_2 - B_1) = q_{ms}$	$\hat{n} \cdot (B_2 - B_1) = 0$	$\hat{n} \cdot B_2 = 0$	$\hat{n} \cdot B_2 = q_{ms}$