71. (a) The electric field amplitude is $E_m = \sqrt{2}\,E_{\rm rms} = 70.7$ V/m, so that the magnetic field amplitude is $B_m = 2.36 \times 10^{-7}$ T by Eq. 34-5. Since the direction of propagation, $\vec{E}$, and $\vec{B}$ are mutually perpendicular, we infer that the only non-zero component of $\vec{B}$ is B_x, and note that the direction of propagation being along the $-z$ axis means the spatial and temporal parts of the wave function argument are of like sign (see §17-5). Also, from $\lambda = 250$ nm, we find that $f = c/\lambda = 1.20 \times 10^{15}$ Hz, which leads to $\omega = 2\pi f = 7.53 \times 10^{15}$ rad/s. Also, we note that $k = 2\pi/\lambda = 2.51 \times 10^{7}$ m^{-1}. Thus, assuming some "initial condition" (that, say the field is zero, with its derivative positive, at $z = 0$ when $t = 0$), we have

$$B_x = 2.36 \times 10^{-7}\ \sin\left(\left(2.51 \times 10^{7}\right) z + \left(7.53 \times 10^{15}\right) t\right)$$

in SI units.

(b) The exposed area of the triangular chip is $A = \sqrt{3}\,\ell^2/8$, where $\ell = 2.00 \times 10^{-6}$ m. The intensity of the wave is

$$I = \frac{1}{c\mu_0}\,E_{\rm rms}^2 = 6.64\ \text{W/m}^2\ .$$

Thus, Eq. 34-33 leads to

$$F = \frac{2IA}{c} = 3.83 \times 10^{-20}\ \text{N}\ .$$