$$p(\theta, w \mid \mathbf{y}) \propto p(\mathbf{y} \mid \theta, w)\, p(\theta \mid w)\, p(w)$$

$$p(\theta \mid w, \mathbf{y}) = \frac{p(\theta, w, \mathbf{y})}{p(w, \mathbf{y})} = \frac{p(\theta, w \mid \mathbf{y})\, p(\mathbf{y})}{p(w \mid \mathbf{y})\, p(\mathbf{y})}$$
$$\propto p(\mathbf{y} \mid \theta, w)\, p(\theta \mid w)$$

$$p(\theta, w \mid \mathbf{y}) \propto w^{(n+d+1)/2-1} \exp\left(-w(n+\kappa) \frac{\left(\theta - \frac{n\bar{y} + \mu\kappa}{n+\kappa}\right)^2}{2} \right) \exp\left(-\frac{w}{2}\left(\mathbf{y}^\top \mathbf{y} + \kappa\mu^2 + \eta\right) \right)$$

$$p(\theta \mid w, \mathbf{y}) \propto \exp\left(-w(n+\kappa) \frac{\left(\theta - \frac{n\bar{y} + \mu\kappa}{n+\kappa}\right)^2}{2} \right)$$
$$\propto \exp\left(-\frac{1}{2} \left(\frac{\theta - \frac{n\bar{y} + \mu\kappa}{n+\kappa}}{\sqrt{\left(w(n+\kappa)\right)^{-1}}} \right)^2 \right)$$