Battery :

$$
\begin{aligned}
Q_{batt} &\approx \textbf{3600mAh} \times 2 \text{ (2 batteries)} \\
V_{batt} &= 3.7\text{V}
\end{aligned}
$$

$$
\begin{aligned}
E_{batt} &= \frac{Q_{batt} \times V_{batt}}{1000} \\
&= \frac{3600\text{mAh} \times 2 \times 3.7\text{V}}{1000} \\
&= \boxed{26.64\text{Wh}}
\end{aligned}
$$

UPS :

$$
\eta_{ups} \approx 85\%
$$

Orange Pi :

$$
\begin{aligned}
P_{pi-idle} &\approx 1.09\text{W} \\
P_{pi-active} &\approx 2.4\text{W} \\
I_{pi-peak} &= 2\text{A} \\
V_{pi} &= 5\textbf{V}
\end{aligned}
$$

$$
\begin{aligned}
P_{pi-idle} &= \boxed{1.09\text{W}} \\
P_{pi-active} &= \boxed{2.4\text{W}}
\end{aligned}
$$

OV5640 :

$$
\begin{aligned}
I_{5640-sleep} &= 20\mu\text{A} \\
I_{5640-active} &= 140\text{mA} \\
V_{5640} &= 3.3\text{V}
\end{aligned}
$$

$$
\begin{aligned}
P_{5640-sleep} &= 20\mu\text{A} \times 3.3\text{V} = \boxed{66\mu\text{W}} \\
P_{5640-active} &= 140\text{mA} \times 3.3\text{V} = \boxed{462\text{mW}}
\end{aligned}
$$

Earphone(Average) :

$$
\begin{aligned}
I_{earph} &\approx 19.02\text{mA} \\
V_{earph} &\approx 0.21\text{V}
\end{aligned}
$$

$$
P_{earph} = 19.02\text{mA} \times 0.21\text{V} \approx \boxed{4\text{mW}}
$$

$$
\begin{aligned}
P_{total-sleep} &= \frac{P_{pi-idle} + P_{5640-sleep} + P_{earph}}{\eta_{ups}} \\
&= \frac{1.09\text{W} + 66\mu\text{W} + 4\text{mW}}{85\%} \\
&= \frac{1.09\text{W} + 6.6 \times 10^{-5}\text{W} + 4 \times 10^{-3}\text{W}}{85\%} \\
&= \frac{1.094066\text{W}}{85\%} \\
&= 1.28713647\text{W} \\
&\approx \boxed{1.3\text{W}}
\end{aligned}
$$

$$
\begin{aligned}
P_{total-active} &= \frac{P_{pi-active} + P_{5640-active} + P_{earph}}{\eta_{ups}} \\
&= \frac{2.4\text{W} + 462\text{mW} + 4\text{mW}}{85\%} \\
&= \frac{2.866\text{W}}{85\%} \\
&\approx \boxed{3.37\text{W}}
\end{aligned}
$$

$$
T_{sleep} = \frac{E_{batt}}{P_{total-sleep}} = \frac{26.64\text{Wh}}{1.3W} \approx \boxed{20.49\text{h}}
$$

$$
T_{active} = \frac{E_{batt}}{P_{total-active}} = \frac{26.64\text{Wh}}{3.37\text{W}} \approx \boxed{7.9\text{h}}
$$

The device can running 20.49 hours under sleep mode, 7.9 hours under active mode.