

CoolRunner CPLDs - Your Best Choice for Battery Operation

Recent studies prove that the Xilinx CoolRunner™ family gives you far longer battery life than any other CPLD on the market.

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The hand-held consumer electronics market is currently experiencing unprecedented growth, and it has become imperative for manufacturers to maximize battery longevity to enhance their competitive edge. With the CoolRunner CPLD family you get high performance, extremely low power, and field upgradeability, in a very small package—clearly the best solution for the next generation of low cost portable equipment.

CPLD Comparison

Your battery-operated design will run much longer with CoolRunner CPLDs. To illustrate the dramatic difference, Figure 1 compares the impact on battery life using CPLDs from Altera®, Cypress®, Lattice®, Vantis® and Xilinx. This comparison was implemented with the following conditions:

- Two Energizer® No. E91 AA 1.5V alkaline batteries were used as the power source.
- The CPLD was the only device loading the batteries.
- Each CPLD was fully populated with 16 bit binary counters.
- All counters were clocked at 20 MHz.
- All outputs were unloaded.

Dynamic Power Consumption

As you can see from Figure 1, CoolRunner CPLDs extend battery life far beyond the competition. In fact, the competition was given a power advantage by measuring their CPLDs in low power mode. However, the competition's CPLDs run much slower in low power mode. CoolRunner CPLDs do not need a low power mode and they always operate at full speed.

Static Power Consumption

Since the CoolRunner CPLD draws 1/1000th the power that the competition requires at standby, your power management requirements will be dramatically reduced or eliminated. As shown in Figure 2, in standby mode, the CoolRunner CPLD can extend battery life up to 390 times that of the competition.

Total Power Consumption

By modulating the dynamic operation (full power) with static operation (standby mode), you will considerably extend the battery life of your design using CoolRunner CPLDs. Figure 3 illustrates battery longevity in the form of duty cycle where, for example, a 75% duty cycle represents 75% dynamic and 25% static operation.

Conclusion

CoolRunner CPLDs are clearly the low power leader—for your company to remain competitive in the rapidly growing portable market, your best choice is Xilinx.

See the articles on page ___ and ___ for more information. You can find the full story on CoolRunner CPLDs at: <http://support.xilinx.com/products/xpla3.htm> and <http://support.xilinx.com/products/coolpld.htm>

You can extend your battery life up to 200 times just by using CoolRunner CPLDs.

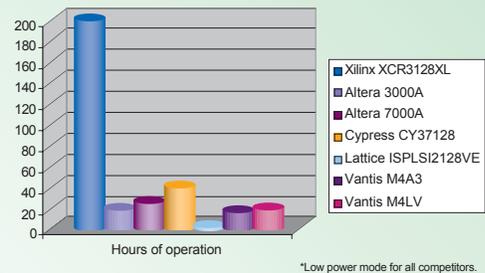


Figure 1 - Dynamic CPLD battery life comparison.

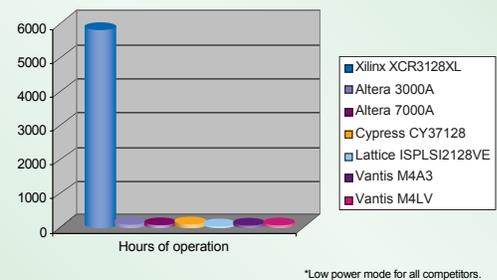


Figure 2 - Static CPLD battery life comparison.

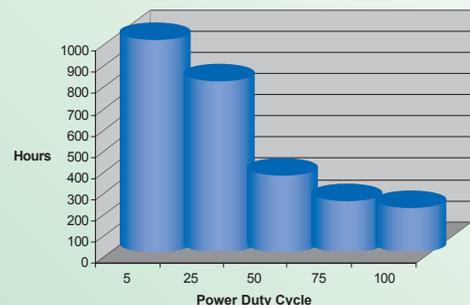


Figure 3 - CoolRunner duty cycle effect on battery life.