



What are the primary drivers for developing low power designs? Cost savings, movement to green, longer life for batteries?

More and more wireless devices around us in our homes are running on batteries: remote controls, thermostats, temperature, smoke and security sensors, etc. As a consequence, we have to often replace or recharge those depleted batteries. This can be quite a nuisance especially when they start beeping in the middle of the night.

As a result of technology improvements, battery life is slowly lengthening. However, the real solution is to make the devices that run on batteries require much less power. By developing smarter and more efficient radio chips in these wireless devices, engineers are working towards the goal of developing wireless devices that can operate for years on a single battery, that can be powered for longer than the estimated life of the product itself. This goal can also be reached with so-called energy harvesters, but these devices are usually too bulky and/or expensive for mass adoption.

At the same time as energy consumption is reduced, additional range and functionality is added. The latest generation low power wireless radio chips can provide a range of up to 150 feet, enough to enabling a remote control to provide an interactive, two way connection, to a central set top box (access point) and then out to the internet. For example, GreenPeak Technologies is developing transceiver chips that can be used in remote controls that support a battery life of more than 10 years at 500 key clicks per day – without compromising range and performance. Accelerating their acceptance, the GreenPeak enabled remote control provides better range than traditional IR-based remote controls along with a better user experience.

Low power wireless is green. Batteries have a heavy carbon footprint, are packed with heavy metals and toxic chemicals, and pose challenges for disposal and recycling. The development of ultra low power radio chips means that despite the exploding growth in the number of wireless devices in our homes, there does not have to be a corresponding demand for more batteries. With the efforts to make designs maintenance free (in other words, only using one battery for the whole life time) this demand for more batteries can be reduced and although not a primary driver for low power wireless – the environment definitely benefits.

Do you have comments or suggestions? I appreciate your feedback!

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