Bluetooth Solution Improves Battery Life by Up to 30 Minutes

CSR has collaborated with Intel Corporation to redesign how its integrated Bluetooth chips interacts with a laptop PC. Laptops employing the new technology from CSR and Intel will save up to 1W, providing Intel-based laptops with up to an extra 30 minutes of battery life. Bluetooth Advanced Power Management (APM) can now be designed into Intel mobile processor-based laptops.

As part of the collaboration, CSR has developed new Bluetooth firmware and complementary Windows software which implements an Intel-developed power-saving technique called USB Sideband Deferring. The objective is to eliminate the power drain caused by frequent polling of the Bluetooth chip by the USB subsystem.

Intel mobile processors implement many techniques to save power. One of the most important is switching to low-power sleep states when idle. An important sleep state is called C3. An integrated USB Bluetooth device can prevent the processor from entering the C3 state because it needs to be constantly polled to check whether it has any data to send to the system. This constant polling prevents entry into C3. Bluetooth APM lowers power consumption by making sure that the Bluetooth device is only polled when it has data to pass to the system. The rest of the time the processor can enter C3.

“Laptop PCs are increasingly becoming an integral part of contemporary mobile lifestyle. Bluetooth technology further advances the paradigm of unwired computing. CSR’s implementation of Intel’s USB sideband deferring technology makes this possible while saving system power,” said Kamal Shah, manager, Mobility Enabling Initiative, Mobile Platforms Group, Intel Corporation.

“By working closely together, CSR and Intel have readdressed the way that Bluetooth interacts with the main system and therefore how much power is consumed within the laptop PC,” said Bill Nayavich, PC Market Manager at CSR. “This collaboration between Intel and CSR allows us to offer OEMs an innovative approach to enabling longer battery life for laptops.”

Bluetooth Advanced Power Management is available now using firmware for the Flash memory-based BlueCore4-External.

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