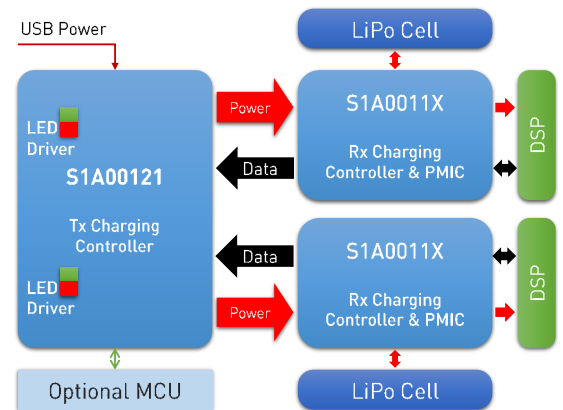


Power Management for Hearing Aids

All in one solution for (wireless) charging and power management

Epson has been an independent manufacturer for ICs and crystals for more than 45 years and with everything in-house for production they can serve the needs for long term and stable supply chains.

The design of low power ICs for applications like watches, mobile medical equipment and hearing aids is one of Epson's expertise and as they now present the next generation of highly integrated power management ICs for hearing aids, Epson is the ideal partner for innovative next-generation product design.



S1A00121 Key facts (Tx)

- ◆ 2x TX output stages to charge 2 hearing aids at the same time with current sensing.
- ◆ LED driver for simple charger design without requiring a host microcontroller
- ◆ Serial interface for host controller for featured charging station, e.g. with displays to show exact charging state of hearing aid devices
- ◆ Small QFN package (9mm x 9mm)

S1A0011x Key facts (Rx)

- ◆ LiPo Charger with CC or CV control and versatile configuration (target # of cycles, battery temp.)
- ◆ 0.1W wireless charging in free kHz band (up to 40mA charging current in latest generation)
- ◆ Integrated safety and monitoring features (battery voltage monitoring, current & temp supervision, error handling, over current and voltage protection, over discharge detection)
- ◆ High efficiency step down converter (~90% @ Iout=2mA, >96% @ Iout>5mA)
- ◆ Connects 2 voltage domains (battery/charging (3.7V/5V) and DSP (1.2V)) in communication
- ◆ Additional features: internal CR oscillator, internal rectification (S1A00112B), hall switch/accelerometer sensor support, internal flash ROM to hold configuration
- ◆ Very small WCSP package (2.6mm x 3.4mm / 2.43mm x 2.42mm)

This flexible solution meets the complex requirements for new features in hearing aids like:

- ◆ Extremely good efficiency:
 - Iq on RX side of approx. 70µA @ 60kHz while charging
 - ~10nA in shutdown mode
- ◆ Fast charging supported.
- ◆ No need for battery exchange being "on the road" allowing for environmentally friendly design.
- ◆ Enabling enhanced charging station to show exact state of charge and status without the need for a smartphone.

Contact us now to discuss the special needs for your next generation product!