

• **Charging Mobile Devices from Shutdown PCs**

STMicroelectronics has perfected advanced features in its latest PC USB chips that significantly reduce the environmental impact of charging mobile devices.

As smartphones and media players typically connect to a PC for data exchange, users are tending also to charge their devices from PC USB ports. Indeed, the International Electrotechnical Commission's (IEC) universal phone-charger standard promotes USB charging by making use of the USB interface specification. The IEC says the standard could help reduce the 51,000 tons of redundant chargers produced each year and cut the mobile industry's annual greenhouse gas emissions by 13.6 million tons.

USB charge controller



ST's new STCC5011 and STCC5021 go a step further in saving energy and reducing CO2 emissions by allowing users to charge mobile devices from a USB port even when the computer is in software-controlled shutdown mode. Using a unique attach-detection feature, which is patented by ST and operates when the PC is shut down, the chips (called charger emulators) can detect when a mobile device has been connected. This enables the PC's power supply to be activated for charging. The chips also monitor current to turn the power supply off when charging is complete and thereby maximize the energy savings. Other charger emulators require the PC to be in working or sleep mode to charge the device, which consumes more power than when the PC is in shutdown mode. Charging in PC shutdown mode with the STCC5011 or STCC5021 improves the energy

efficiency of USB charging and makes it more convenient for end users.

• **Control Devices via Microchips Implanted in Our Brains**

The human brain remains biology's great, unconquered wilderness, and while the idea of meshing the raw power of the human mind with electronic stimulus and responsiveness has long existed in both science fiction and — to some degree — in reality, we likely won't be controlling our devices with a thought in 2020 as Intel has predicted. While it's currently possible to implant a



chip in the brain and even get one to respond to or stimulate gross neural activity, we simply don't understand the brain's nuance well enough to create the kind of interface that would let you channel surf by simply thinking about it.

• **Intelligent Wireless Bearing technology**

SKF launches SKF Insight™, an innovation in intelligent wireless technologies that are integrated into SKF bearings. SKF developments in



various smart technologies now enable bearings to communicate their operating conditions continuously, with internally powered sensors and data acquisition electronics.

Prior to SKF Insight, condition monitoring techniques could only monitor damage after it has occurred. Now, by sensing directly on the bearing, SKF is able to monitor the damage from the first microscopic effect as it is happening, and with this information, customers can take remedial action to reduce the reason for damage in the bearing – adding lubricant, mitigating transient overloads, etc.

In addition, by monitoring the load directly on the bearing, SKF Insight makes it possible to measure the load the bearing actually experiences rather than what it was designed for. This valuable information can be routed back into the design phase to improve both the system and bearing design.

- Miniaturization – Packaging of sensor technologies enables measurement of critical parameters such as RPM, temperature, velocity, vibration, load and other features.
- Self-powered – Using the application environment itself, smart bearings can generate their own power needed to operate.
- Simplicity – Intelligent wireless communication technology packaged inside the bearing enables it to communicate within environments where traditional WiFi cannot operate.
- Smart networks – Communicating through each other and via a wireless gateway, bearings with SKF Insight form a “mesh network” and can send information relevant to their condition for analysis.

SKF Insight application specific solutions are under trial with key customers in industries including wind energy, railways and metals, and SKF is actively developing more application trials in other industries.

● SIPLACE speed up 50 million Smartphones per year

With its investment in SIPLACE SX-Series and X-Series placement machines, TCL Mobile Communication Co. Ltd. in Huizhou, China, responds to the world’s steadily rising demand for



smartphones. TCL Mobile, one of the world’s largest producers of consumer electronics and part of the TCL Group, has been producing mobile communication devices under the TCL and Alcatel OneTouch brands since 1999. Qu Weihua, head of TCL Mobile’s SMT department, says about his company’s investment: “We have been working with the SIPLACE experts since 2009, when they introduced the first generation of the SIPLACE X-Series. In my opinion, the SIPLACE people are true pioneers. They are always a step ahead and provide us with the latest technologies. The unique flexibility of the SIPLACE machines is just one of their features that enable us to meet our high demands. This year we once again compared the SIPLACE machines with equipment from other makers and performed thorough evaluations. In the end we selected SIPLACE, because we are confident that the machines will meet our requirements for a very long time.

The TCL Mobile plant in Huizhou currently has 32 SIPLACE SMT production lines on which the company churns out 40 to 50 million smartphones per year. Even in 1999, when the company was founded, TCL Mobile operated with SIPLACE HS-50 and F5 HM machines. Today there are 64 placement machines in Huizhou, many of them SIPLACE X-Series machines.

The new generation of the SIPLACE X-Series delivers up to ten percent more performance than

its predecessor in a smaller footprint but with the same number of feeder slots. New features and the enhanced user interface of the SIPLACE Line Monitor and SIPLACE Explorer provide the process transparency TCL Mobile needs while significantly increasing the performance of the entire smartphone production. The new SIPLACE X-Series generation is a particular good choice for high-speed applications that nevertheless require a great deal of precision – just as you often find them in telecommunications production. While delivering a benchmark rating of 120,000 cph (theoretical rating: 135,000 cph), the machines take up only 1.9 x 2.6 meters (6.23 x 8.5 feet) of floor space. The new SIPLACE X4i S even sets a new footprint performance record. For the smartphone lines, the new machines were equipped with SIPLACE SpeedStar 20-nozzle Collect & Place heads which can even place 01005 components at full speed. To meet the rising demand for smartphones, TCL Mobile currently churns out 40 to 50 million units per year on 32 SMT lines – amongst them the new TCLS950.

The SIPLACE X4i S sets a new record in performance per unit of floor space. Its SIPLACE SpeedStar 20-nozzle Collect & Place heads are even able to place 01005 with no performance reduction.

• Hirschmann Solutions Applies Telit Technology in Compact GPS Receiver Antenna

Telit Wireless Solutions, a global provider of high-quality machine-to-machine (M2M) solutions, products and services, announced that



the company's ultra-miniature Jupiter SE880 GPS receiver is to become the positioning technology device integrated into Hirschmann Solutions' RAS 1575 GPS receiver antenna. The new receiver antenna combines high performance, reliability and robustness in a compact housing. Hirschmann Solutions is a specialist in data communication systems for M2M & telematics applications and a business unit of Hirschmann Car Communication GmbH based in Neckartenzlingen, Germany.

The RAS 1575 from Hirschmann Solutions is a GPS antenna with integrated receiver module offered in a compact enclosure measuring only 38 x 34 x 15.5 mm. The company attributes the tiny antenna size to the use of the new SE 880 GPS module from Telit. Among other uses, the antenna can be applied as a retrofit solution for telematics applications in the transport and logistics sector. System integrators for large application like traffic control systems can also benefit from the unique features of the RAS 1575.

With low current consumption, the antenna is ideal for mobile applications. It is connected and fully powered via standard USB 2.0 connection. Location data is delivered by the receiver antenna in the NMEA standard. In the development of the new antenna system, Hirschmann focused on four main aspects: reception quality, flexibility of installation, robustness and compact dimensions. The RAS 1575 maximizes guaranteed GPS received power in an extremely compact and robust housing and the product can be integrated quickly, without any need for customers to engage on their own development work.

The Jupiter SE880 is Telit's ultra-compact GPS receiver module for applications in the commercial, industrial, and consumer segments including wearable and handheld devices. The miniature 4.7x4.7mm LGA (Land Grid Array), SiRFstarIV™-based receiver module employs leading 3-D SiP component embedding technology to achieve best-in-class performance in all dimensions critical for regular or size-constrained GPS applications. The SE880 receiver module was conceived to shorten time-to-market and to make the chipset-versus-module decision an easy one for you to make.

