

Silanna Semiconductor Unveils Latest High-Density Reference Design for 65W Multi-Port Fast Chargers

AnyPort™ production-ready design combines intelligent, adaptive power sharing buck converter with ultra-efficient ACF controller

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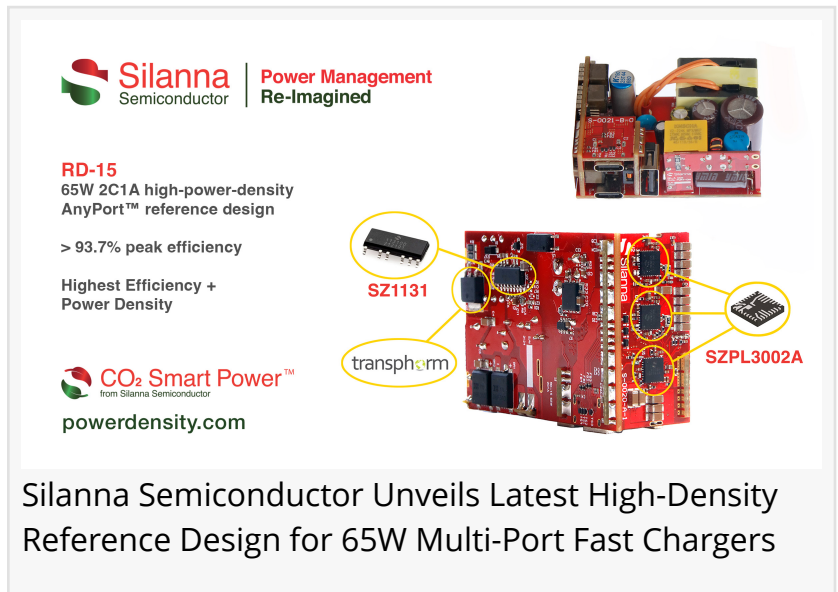
/EINPresswire.com/ -- [Silanna Semiconductor](#), The Power Density Leader, has launched a new integrated reference design that will reduce the development time of multi-port, 65W USB-PD fast chargers. Based on Silanna's CO2 Smart Power™

technologies, the AnyPort™ RD-15 integrates the industry's first DC/DC converter to feature intelligent, adaptive power sharing, the company's advanced active clamp flyback (ACF) AC/DC IC, and all of the other components needed to deliver a fully functional reference design.

Silanna AnyPort architecture allows engineers to complete a charger design for a given power level before specifying and configuring the specific number and type of output ports. This allows a single base charger platform to be deployed across a variety of end products with different output configurations. Time-to-market is further reduced as the RD-15 exceeds conducted and radiated EMI requirements, eliminating the need for pre-production validation and certification.

The RD-15 is a high-power-density, production-ready solution that minimizes total power usage, thanks to an operating efficiency above 93.7% and a no-load consumption down to 161 mW. Efficiency is relatively flat across the universal (90 – 265Vac) input voltage range and low-to-full load conditions.

“Our growing family of production-ready reference designs is helping companies to dramatically reduce the time-to-market for compact, lightweight and ultra-efficient single- and multi-port fast chargers,” says Ahsan Zaman, Silanna Semiconductor’s director of product marketing. “With its advanced power sharing and re-balancing capabilities, the RD-15 is an important addition to this



The image displays the RD-15 reference design, a high-power-density 65W 2C1A AnyPort™ reference design. It features a red PCB with various components, including a buck converter, an ACF controller, and other power management components. The design is highlighted with callouts for the SZ1131, transphorm, and SZPL3002A components. The Silanna Semiconductor logo and the text "Power Management Re-Imagined" are visible in the top left. The RD-15 is described as having > 93.7% peak efficiency and being the "Highest Efficiency + Power Density" design. The CO2 Smart Power™ logo and the website powerdensity.com are also present.

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family and a solution that further improves the choice of AnyPort™ solutions available to manufacturers.”

Integrated into the RD-15 is Silanna’s SZ1131 fully-integrated AC/DC active clamp flyback (ACF) controller and the company’s SZPL3002A high-voltage, high-efficiency integrated 65W buck converter. Combining a high-efficiency synchronous buck converter and an advanced USB PD/FC port controller into a single QFN package, the SZPL3002A power IC significantly reduces the number of components needed to implement 65W fast charger and adapter applications with up to four ports. Power sharing and port power re-balancing functionality are available across two, three, or four ports, with the controller ensuring that port power adapts to the needs of a particular device, irrespective of when connections are made.

The RD-15 is the latest addition to Silanna’s comprehensive family of production-ready reference designs. It provides everything needed to develop high-density chargers with low operational and no-load/standby power consumption and minimum component count, BOM cost and size. This family also includes all-silicon 33W and 45W solutions and silicon- and GaN-based single- and multiple-output 65W and 100W USB-PD reference designs.

Full availability of PCB Gerber and production files further reduces the time from prototyping to full production.

RD-15 Key Features

- 65W 2C1A high-power-density AnyPort™ reference design
- > 93.7% peak efficiency
- 161mW no-load power consumption at 230Vac input
- Flat efficiency across universal (90 – 265Vac) input voltage and load
- Uses Silanna Semiconductor’s newest fully integrated ACF controller (SZ1131)
- SZ1131 integrates ACF controller with UHV active clamp FET, active clamp driver, and start-up regulator
- Up to 146kHz switching frequency operation
- OptiMode™ cycle-by-cycle adaptive digital control
- Self-tuning valley mode switching (VMS)
- Multi-mode operation (burst mode, QR, VMS)
- < 20mW no-load power consumption for up to 65W single port AC/DC solutions
- OTP, OVP, OCP, OPP, and output short circuit protection
- Space-saving 16-pin SOIC package
- Uses Silanna Semiconductor’s high-voltage, high-efficiency 65W integrated buck converter (SZPL3002A)
- Synchronous buck regulator with switching frequencies up to 2MHz
- Integrated USB-PD controller supporting USB-PD R3.0, PPS, BC1.2, QC 2.0/3.0/4.0/4.0+/5.0
- Intelligent multiport power sharing and power re-balancing
- Low-power saving mode
- Selectable power contract configurations - reduces required programming

- Programmable temperature-triggered power throttling
- VCONN power generation for e-marked cables
- Wide input voltage range: 7.0V to 27V
- Supports Vout of 3.3 ~ 21.5V at 3.25A
- UVLO/OCP/OVP/UVP/OTP protection
- QFN 5mm x 5mm thermally enhanced package
- CO2 Smart Power by Silanna Semiconductor

Availability: □

Information is available at <https://powerdensity.com/reference-design/> or by contacting sales@silanna.com.

About Silanna Semiconductor

The Power Density Leader. Delivering on the ultimate Power Management challenge of best-in-class power density and efficiency performance that delights customers with unprecedented BoM savings. Silanna Semiconductor's AC/DC and DC/DC power converter ICs are driving key innovations in Travel Adapters, Laptop Adapters, Appliance Power, Smart Metering, Computing, Lighting, Industrial Power, and Display Power utilizing the latest digital and analog control and device technologies. In addition to our global engineering sales force, customers are supported by regional design centers and online tools. 'Power Density Hero' is an online design tool where customers input their power needs and instantly receive a complete design, schematic, and 'Bill of Materials' (BOM). The Asian Center of Excellence (ACE) has a dedicated team of power system engineers to support our customers in their application specific design needs.

Silanna Semiconductor, with its family of CO2 Smart Power™ ICs, offers technologies that will benefit the planet and the people on it by delivering best-in-class power density and efficiency.

Silanna Semiconductor, headquartered in San Diego, CA, is a privately-held semiconductor company, and has global facilities supporting customers with design centers and offices in North America, Europe, Asia, and Australia.

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