

AI based DC/AC & AC/DC soft switching controller

Summary:

AI based DC/AC & AC/DC soft switching controller.

Differentiation:

Previously, soft-switching has never been successfully-implemented for DC/AC systems with varying input voltage, temperature and load conditions. However, Pre-Switch has overcome the challenges by using AI to constantly-adjust the relative timing of elements within the switching system required to force a resonance to offset the current and voltage wave forms – thereby minimizing switching losses.

Available products:

- Cleanwave200: 200kVA DC/AC, bidirectional, 3 phase, 100kHz, 1kV input, 215Arms/phase, evaluation inverter power block that adapts to customer's PWM
- Pre-Drive 3 (incl. Dev. support): Controller Board w/ integrated FPGA & AI (small - medium volumes)
- Pre-Flex IC: FPGA with AI for high volume
- Pre-Switch Development System to assist in bring-up of Pre-Switch bases systems

Company description:

Pre-Switch is a Silicon Valley based company, founded in 2016 by industry leading experts with various patents in power electronics. The Pre-Switch team combines together over 100 years of Power electronic experience.

Applications:

- ✓ Motor drives
- ✓ Power supplies
- ✓ Automotive
- ✓ Renewables

- ✓ Transportation
- ✓ Aerospace
- ✓ Server/Telecom
- ✓ Battery Charging



Technical specifications:

- DC/AC and AC/DC applications from 50kW+
- SiC or Si based applications (GaN on Roadmap)
- Switching frequencies from 10kHz to 500kHz

Further remarks:

Pre-Switch, Inc., has released first data from its Cleanwave 200kW inverter reference. Double pulse test data demonstrates that the Pre-Switch soft-switching platform – comprising the Pre-Drive 3 controller board powered by the Pre-Flex FPGA, and RPG gate driver board – reduces total system switching losses by 90% or more.

