3DFS Software-Defined Electricity Products

VectorQ Series
Power Controllers

- **VectorQ** Core — Real-Time model based control for electricity
- **VectorVFD** — Full wave synthesis : 400kHz; Real-Time TRQ & RPM control
- **VectorQ1** — Residential Meter; 4 kVAR / 2 Phase
- **VectorQ1R** — AV / hi-fi Device; 4 kVAR / 2 Phase
- **VectorQ2** — Power Controller; 208/240V Comercial; 9 kVAR / 3 Phase
- **VectorQ5** — Power Controller; 480V Industrial; 60 kVAR / 3 Phase
- **VectorQ8** — Power Controller; 780V Industrial; 200 kVAR / 3 Phase
- **VectorQU** — Utility Controller; Tailored System; up to 26kV

Calibri Series
Data Acquisition & Analysis

- **SAM** Controllers — Intelligent Appliances
- **CurrentSee** Residential — Clip-on energy monitoring
- **CurrentSee** Industrial — Clip-on energy monitoring
- **OctoPush** Commercial — Embedded energy monitoring
- **Calibri** Core — Predictive analytics; Real-Time data mining; Matrix processing
- **CalibriEX** — High Speed DAQ; 16bit 4GS/s
- **Calibri** T-24 — Power Analyzer; 24bit / 22 Analog I/O; 3500 Samples /wave
- **Calibri** E-24 — Battery Analysis & Characterization System

SineSync Series
Energy Storage

- **SineSyncBMS** — OEM Product
- **SineSync** Core — Chemistry Modeling
- **SineSyncUPS** — 3 KVA : Li-ion
- **SineSync** 17 kWh — ESS
- **SineSync** 100 kWh — ESS
- **SineSync** 1 MWh — ESS
- **SineSync** 10 MWh — ESS : 40' container

3DFS is a vertically integrated research and product development company that leverages our proprietary computing methodology, Task Oriented Optimal Computing to deliver elegant solutions to the world's most challenging problems.

We proudly manufacture all of our products in Pittsboro, North Carolina in the United States of America.

3DFS
SOFTWARE-DEFINED ELECTICITY

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Version - 2.1E

3DFS
SOFTWARE-DEFINED ELECTICITY

Real-Time Digital Control of Electricity

Power network & grid stability are determined by three main factors, reactive power, harmonic distortion and how evenly the phases are balanced.

These three factors are interconnected and the challenge is in efficiently addressing all of them simultaneously as electricity flows.

3DFS has developed an exciting new technology that corrects reactive power and harmonic distortion in a power network while evenly balancing the phases all in Real-Time as electricity flows and maximizing power delivery while minimizing loss.

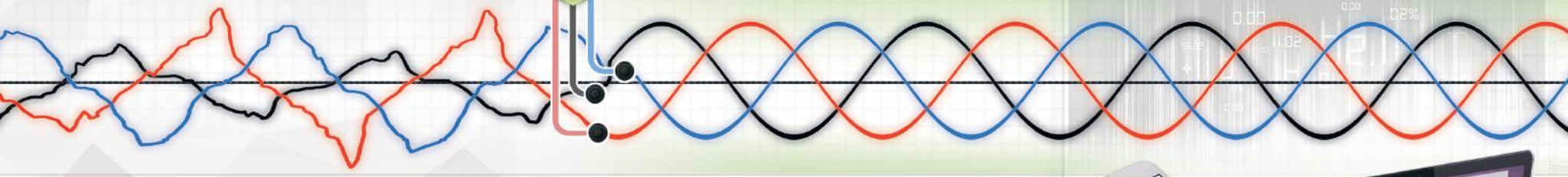
VectorQ Series power controllers are **intelligent computing power electronics** devices installed in parallel at the panel level with a voltage connection on each phase and directly measuring electricity on each phase, neutral and ground in high resolution.

All data inputs are synchronized, occuring every 6ns, with control signals sent to the fast transistor based power electronics to **make subcycle adjustments to the electricity each microsecond, as it flows**.

3DFS technology opens up an **entirely new area of science called electricity analytics**, which is the technological capability of near instant, error free data processing delivering exact informatics on power as it flows, at the astonishingly fast pace of 4 ns after data acquisition.

This speed of data processing opens up never before seen visibility into the true behavior of electricity in Real-Time and provides a reliable analysis what is truly occurring in a circuit at all times.

3DFS is installed in parallel and cleans, balances and corrects electricity in Real-Time



- **Reactive Power**
- **Harmonic Distortion**
- **Phase Imbalance**

The presence and amount of either of these three factors determines the efficiency and stability of the power network and supply.

Most importantly, when these factors are out of control, the safety of the workers and consumers is in jeopardy, which increases the liability of the utility.

Improved Resiliency
Maintains ideal power flow to all loads providing an additional layer of protection.

Power Network Stability
Instantly adjusts power supply to match Real-Time demand resulting in power flow without fluctuation or distortion.

Load Productivity
Optimal power delivered to every load results in ideal work output for the entire system.

Layered Energy Efficiency
Direct reduction in energy usage for all loads. More with improved asset performance.

Electricity analytics revolutionizes

non-intrusive load monitoring in power networks. Every device in generation, transmission, distribution, storage and consuming electricity have unique Real-Time power needs and can be identified with absolute certainty. This opens transformative possibilities in the future of electronics and controls design and function.