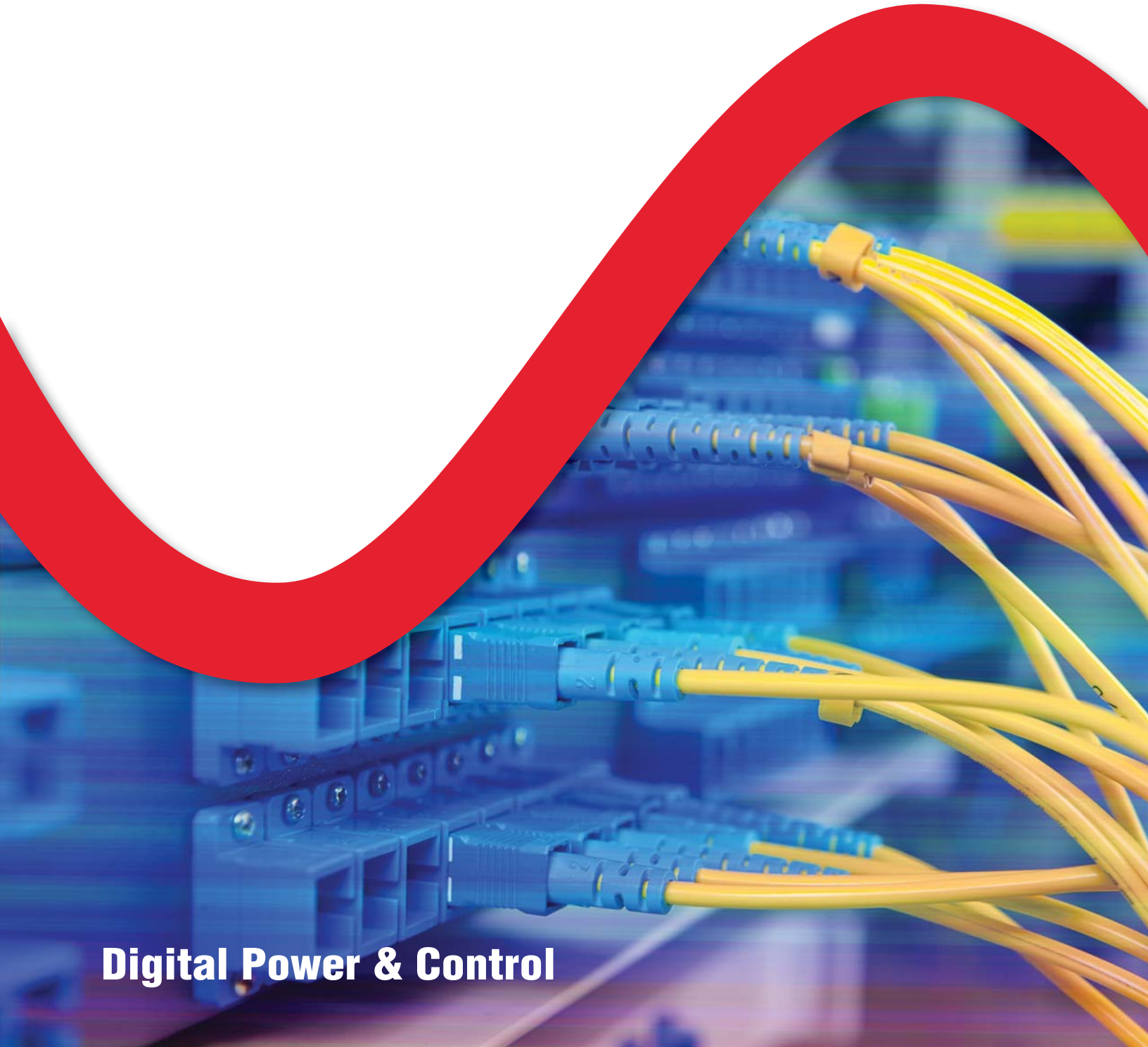
power-one®

Changing the Shape of Power



Digital Power & Control

d-PWER™ – A COMPLETE PACKAGE

d-PWER is the only completely integrated digital power solution, which ensures:

- Dramatically reduced design cost, cycle time and complexity – from 2 days to 1/2 day for simple systems or from 8 weeks to 2-3 days for complex systems
- No hardware-based analog IBA design change difficulties – digital IBA changes are performed easily in software
- Reduced board space requirements
- Reduced engineering time and risks
- Lower overall power system costs

What does this mean for your design application?

d-PWER is a fully-featured system configurable to any application – with one component to source and maintain for a given current level.

For more information, please contact us:

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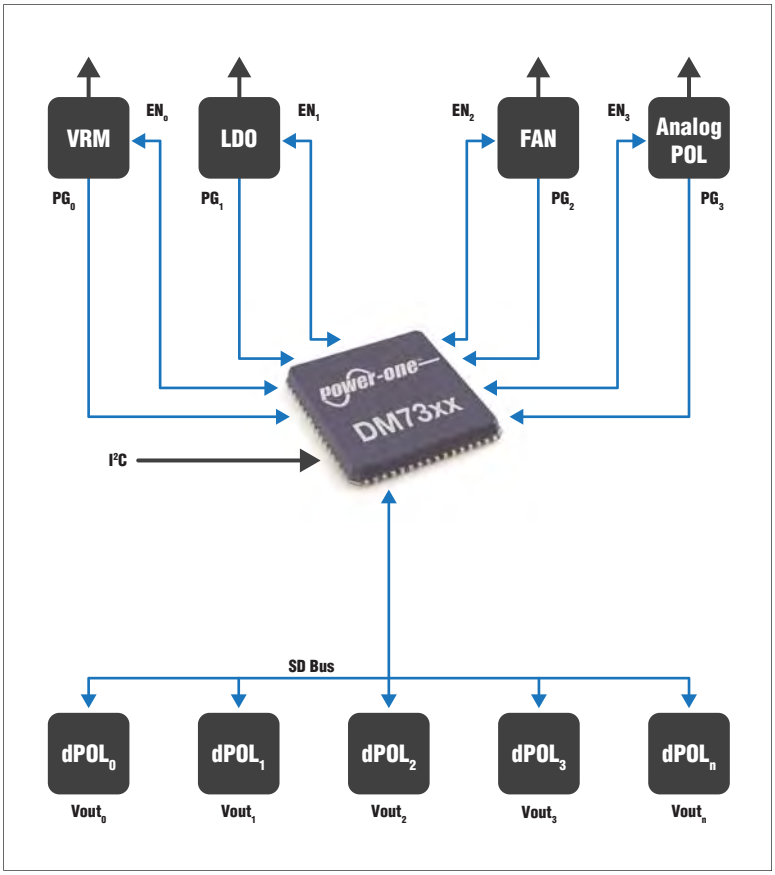
d-PWER™ CAN CONTROL AND MONITOR NON-DP DEVICES



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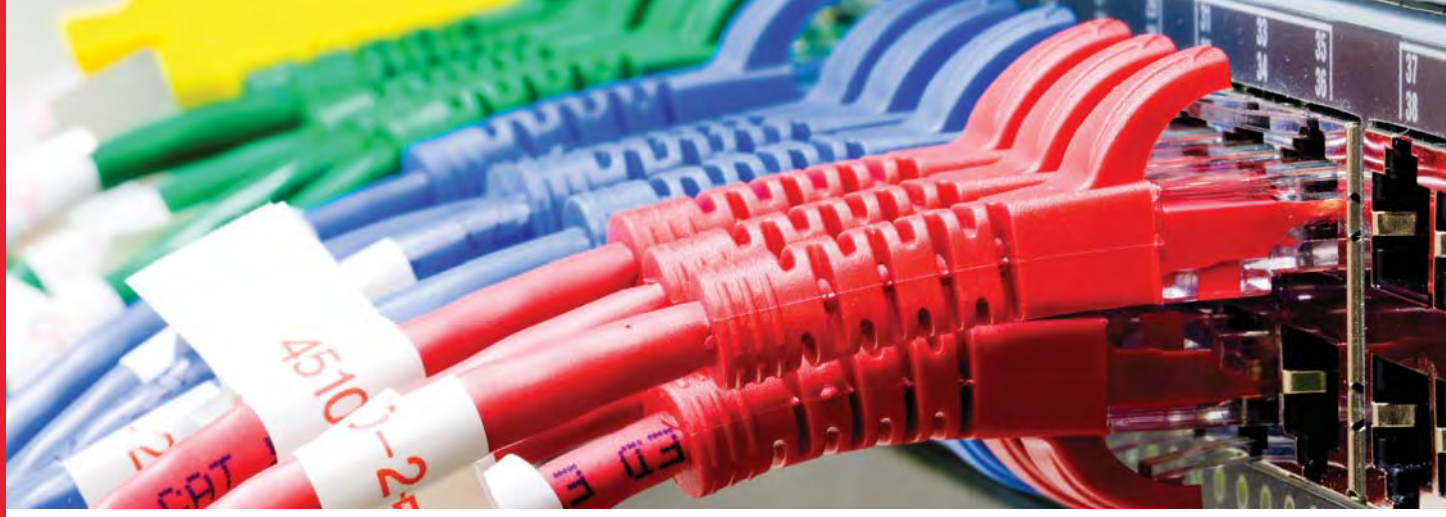


d-PWER™ DIGITAL POWER TECHNOLOGY

Power-One's Digital Power architecture achieves an unprecedented level of power-system integration to enable reduced power-system component counts, sophisticated power management capabilities and improved reliability, cost and power density. Parameters, such as output voltages, sequencing, tracking and protection limits can be user defined through a graphical user interface (GUI) and communications bus.

Why Digital Power?

Digital power control allows for precise power conversion over the range of load and input voltage, without many of the losses associated with analog circuitry. It is especially useful at lighter loads where digital current share can maintain load balancing. As an inherently green technology, d-PWER's telemetry feature allows the system to monitor operation and make decisions that can increase overall system efficiency and reduce operating costs.

d-PWER – The Only System-Level Solution

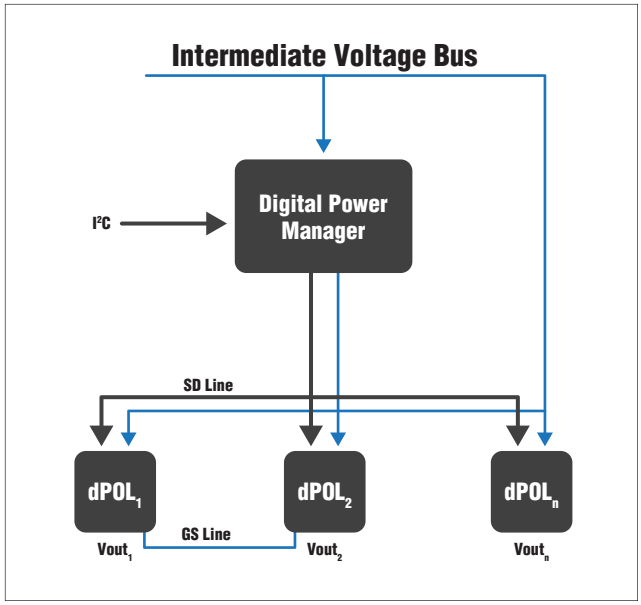
Power-One pioneered digital power technology and offers the only proven, integrated system-level solution that can meet any design requirements, such as:

- Control the turn-on and turn-off profiles of the outputs (tracking and sequencing)
- Utilize an advanced Fault Managenent Scheme
- Monitor voltage, current or temperature at the system level
- Margin outputs during production testing and monitor voltage, current or temperature at the system level
- Minimize output voltage transients during step load current changes
- Reduce system noise and EMI through PWM synchronization and phase interleave
- Change power system conguration without making any hardware changes
- Auto Compensate for system conditions.

System Level Digital Power Overview

d-PWER is congured at the system level, ensuring that:

- No external components are required
- dPOL parameters are fully programmable – using GUI, I²C bus
- Conguration settings stored in DPM's NV memory
- dPOLs do not contain NV memory for increased reliability and are fully operational with default settings
- Status (V, I, T) of each indivudual dPOL is constantly reported to the DPM and is fully-accessible via I²C bus



d-PWER™ DPM DIGITAL POWER MANAGER

Model	Board Mount	Package	V_{DD}	No. of dPOLs Supported	No. of Aux. Dev. Supported
DM7304G	SMT	64 pin PQFN	3.3V	4	4
DM7308G	SMT	64 pin PQFN	3.3V	8	4
DM7316G	SMT	64 pin PQFN	3.3V	16	4
DM7332G	SMT	64 pin PQFN	3.3V	32	4

Power-One's DM Series of digital power manager ICs are fully programmable digital power management chips that utilize a industry-standard I²C communication bus interface to control, manage, program and monitor up to 32 digital point of load (dPOL) converters and 4 independent auxiliary outputs. The DM Series completely eliminates the need for external components for power management and programming and monitoring of digital dPOL converters and other industry standard power and peripheral devices.

Key Features & Benefits

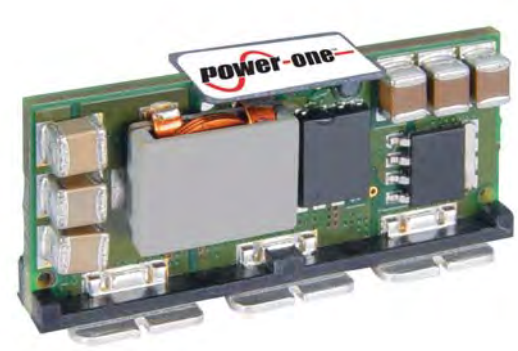
The DM Series provides a wealth of benefits for digital power management and control, including:

- Programming, synchronization, control and monitoring of 32 indpendent dPOLs
- Industry-standard 9mm x 9mm 64-pin PQFN package
- Communications with the host system via an I²C interface and the dPOLs along the SD line, isolating the dPOLs from the sytem I²C
- Data conversion between the I²C interface and the dPOLs
- Stores conguration data in non-volatile memory and protects data integrity with CRC, read back and more
- Numerous supervisory functions, such as:
  - > IBV, UV and OV protection with programmable thresholds
  - > Communication with the AC/DC front end, DC/DC bus converter, optional crowbar and other system devices via hardware interfaces
  - > 1KB of user memory that can be used to store a runtime counter for example.

d-PWER™ DP DIGITAL POINTS OF LOAD (dPOL) SERIES

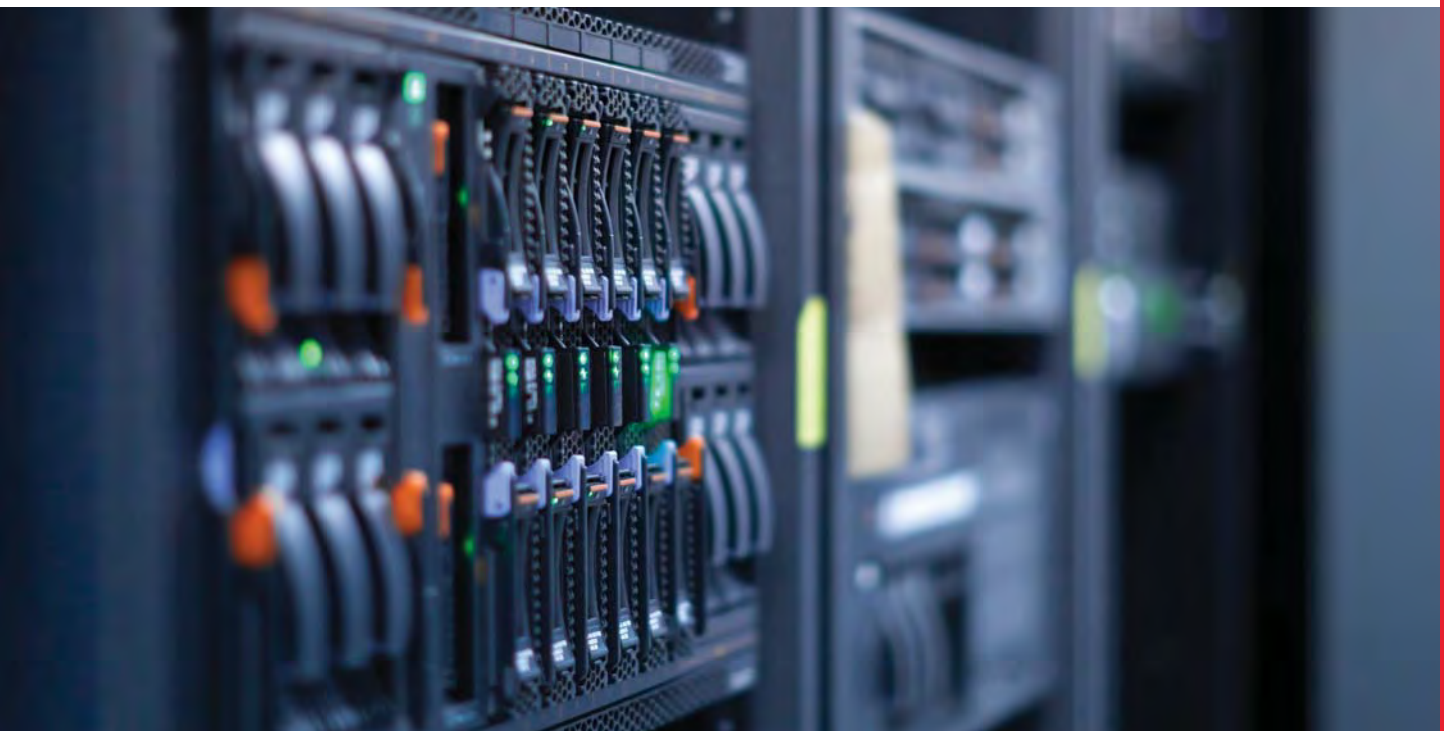
Model	Orientation/Board Mount	Foot Print	V_{IN}	V_{OUT} Programmable	I_{OUT}	Output Power
DP8105G	Vertical / THT	31 x 7 x 21mm	8 - 14V	0.7 - 5.50V	5A	27W
DP7007G	Horizontal / SMT	22 x 13 x 7mm	8 - 14V	0.7 - 5.50V	7A	39W
DP7010G	Horizontal / SMT	32 x 14 x 7mm	8 - 14V	0.7 - 5.50V	10A	55W
DP8110G	Horizontal / THT	31 x 7 x 21mm	8 - 14V	0.7 - 5.50V	10A	55W
DP7115G	Vertical / SMT	32 x 14 x 8mm	8 - 14V	0.7 - 5.50V	15A	83W
DP7120G	Vertical / SMT	32 x 14 x 8mm	8 - 14V	0.7 - 5.50V	20A	110W
DP8120G	Vertical / THT	41 x 21 x 10mm	8 - 14V	0.7 - 5.50V	20A	110W
DP7130G	Vertical / SMT	32 x 15 x 8mm	8 - 14V	0.7 - 3.65V	30A	110W
DP8140G	Vertical / THT	46 x 14 x 28mm	8 - 14V	0.7 - 3.65V	40A	146W
DP8160G	Vertical / THT	81 x 14 x 28mm	8 - 14V	0.7 - 2.75V	60A	165W

Power-One's digital point of load (dPOL) converters are bus programmable. Wide input and user-defined output ranges decrease the number of models required in inventory and are recommended for use with regulated bus converters in an Intermediate Bus Architecture (IBA). The DP Series is a line of intelligent, fully programmable step-down point-of-load DC-DC modules integrating digital power conversion. The DM7300 Series Digital Power Managers, along with DP dPOLs completely eliminate the need for external components for sequencing, tracking, protection, monitoring, and reporting. All parameters of the dPOLs are programmable via the industry-standard I^2C communication bus and can be changed by a user at any time during product development and service.



Key Programmable Parameters

- Output Voltage (0.7V to 5.50V)
- Margining
- Switching Frequency 500kHz – 1.0MHz
- Duty Cycle (No Limits)
- Turn-On Delay: 0 – 255 mSec
- Turn-Off Delay: 0 – 63 mSec
- Load Regulation (up to .5% of the Set Point)
- Feedback Loop Compensation P (Kr) I (Ti) D (Td)
- Interleave (Phase Shift)
- All Protection Thresholds OCP, UVP, OVP and PG



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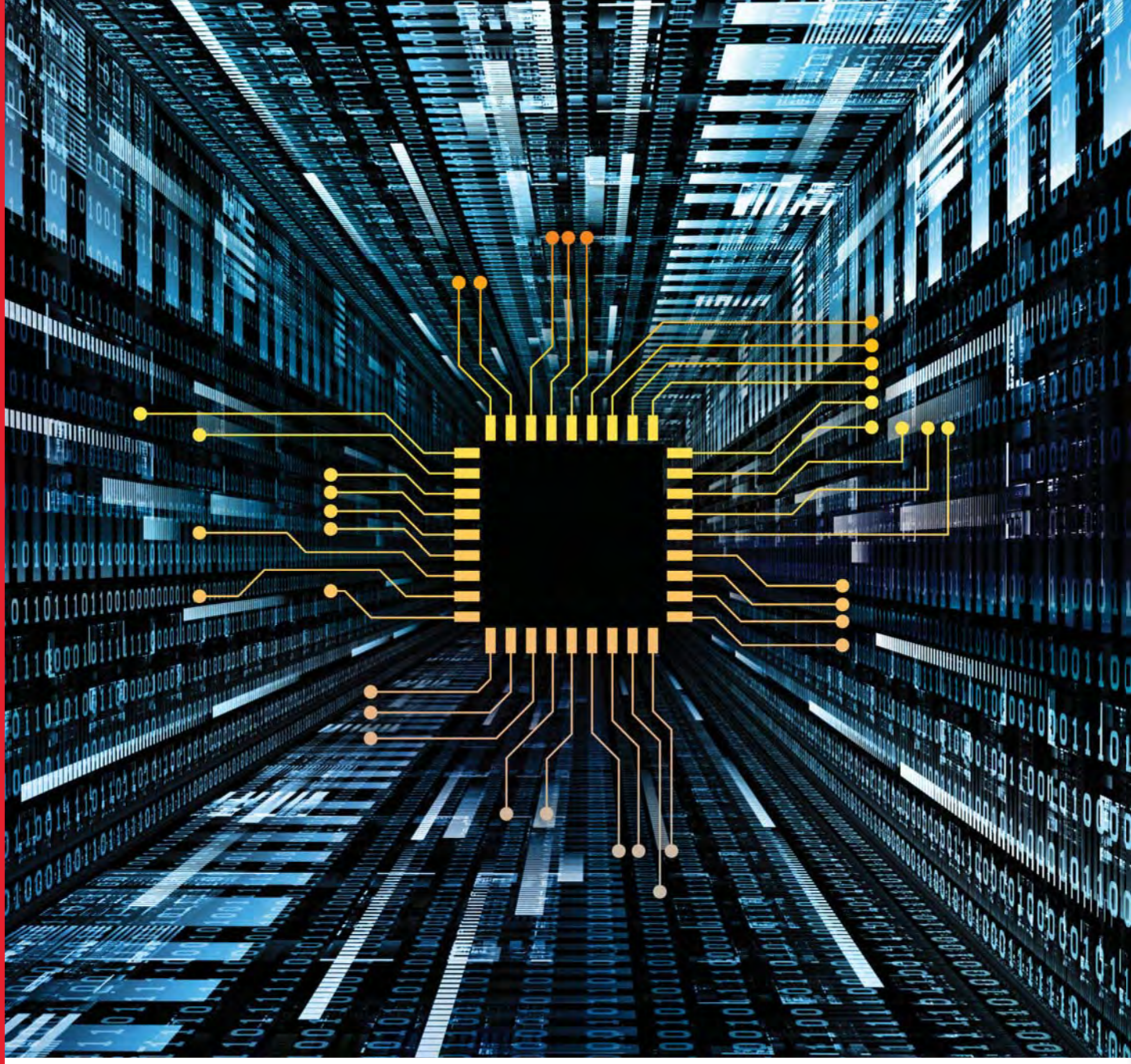

Nuclear and Medical Applications

Power-One® products are not designed, intended for use in or authorized for use as critical components in life support systems, equipment used in hazardous environments or nuclear control systems, without the express written consent of the respective divisional president of Power-One, Inc.

Technical Revisions

The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

For more information, please contact us:

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