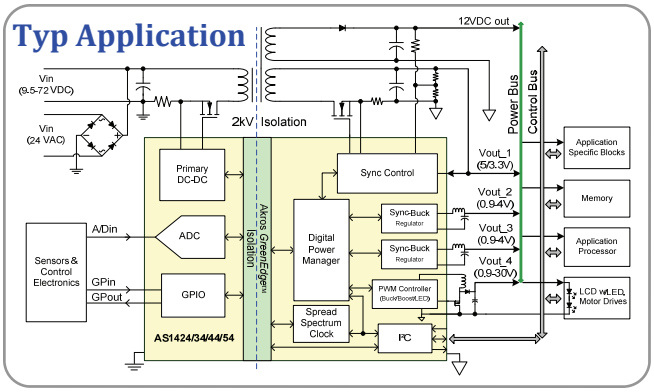
AS14x4 Product Family Sales Brief

9-72VDC Digital Power SoC with Integrated GreenEdge™ 2kV Isolation & Quad Outputs

Product Key Attributes

- **Integrated GreenEdge 2kV Digital Isolation, no Opto design**
- **Four direct high-efficiency rails**, with additional high-voltage rails via transformer windings. Use as central power-manager
- Use in distributed bus applications covering **12VDC, 24VDC, 24VAC, 48VDC, and 36-72VDC** telecom rack applications
- Applications requiring **Basic Isolation (1.5kVrms)**
- As a single SoC, part replaces many external ICs and passives. IC can not be just compared to external active replacements.
- Value added features implementation for **system power management and system diagnostic features**

Typ Application



Key Benefits & Selling Points

Efficiency & Power Management

- 90-92% efficiency performance across wide-range of apps
- Reduces system heat and eases thermal management
- Separate enable/disable for each buck regulator
- Eases design for Energy saving directives like EuP

EMI & Noise Management

- All PWMs synchronized to one clock—predictive noise
- Spread-spectrum reduces power supply spectral noise >15dB
- Reduces system interference, eliminates PWM noise concerns

Integration, BOM and Space Reduction

- SoC serves functionality of 8-10 different ICs
- Simplifies power system design to ONE chip rather than dealing with large number of multi-vendor components
- Board space savings of 40-60% over traditional designs
- External BOM reduction in ~25% range

Power System Reliability

- Eliminates opto-couplers drift/aging issues
- Improves power system reliability

Value added features

- Isolated GPIOs can be used for primary-side system control
- ADC used for input bus voltage measurements or sensors
- SW alarm functions provide power system diagnostics to µC
- Voltage margining eases production testing
- Reduce hardware board spin and reduce development cycle with EMC and programming features

Platform scalability

- Pin-compatible devices for wide power range requirements
- Foot-print compatible designs, PoE and non-PoE systems

Learn more about GreenEdge Technology and Benefits

Product Family

Part #	Hardware Mode	Software (I²C) Mode	Iout_1,4 (each)	Iout_2,3 (max, each)
AS1424	x		Set Externally	1.25 ARMS
AS1434	x	x	Set Externally	1.25 ARMS
AS1444	x		Set Externally	2.0 ARMS
AS1454	x	x	Set Externally	2.0 ARMS

All parts are available in footprint compatible 9x9 64pin QFN, ROHS compliant package

Key Applications & Value Positioning

Industrial: Datacom, PCs, WiFi, RFID, Instrumentation

- Wide-input range; Scalability for low/high power equipments; High noise immunity and isolation, BOM reduction and design simplification; Isolated control/sensing (gpio, adc); Low EMC

Infotainment: Commercial, Auto/Loco, AutoPCs, Signage

- Single Power SoC with LED backlight; High isolation/immunity to ground loops/faults/power bus noise; High efficiency, better thermals; BOM savings; Remote monitoring/diagnostics

Building Management Systems

- Energy-aware—intelligent monitoring, control, diagnostics; Wide-input range, Energy efficiency, Small foot-print, Remote diagnostics, Isolated control and sensing (gpio, adc)

Analog Surveillance Cameras

- Board space and BOM savings, less heat, multi-input (DC, 24VAC) capability, Isolated GPIO for alarms; Scalability: Low/High power, PoE/non-PoE with AS18xx; PTZ support; Low EMC

Telecom, ONU, MDU Units

- 36-72VDC range, High Efficiency for Green applications; Scalability for low/high power equipments; Isolated control and sensing (gpio, adc); BOM/space/cost savings; Low EMC

Other applications:

- Residential Gateways, Femto Cell, Media center
- Base Stations, WiMax/WiFi applications
- Medical peripherals, eSignage, Displays, Analog phones

Typical Competition

No direct competition with SoC that provides this level of integration. Competition is against discreet solutions. Key players:

Linear Tech: Promotes No-Opto Designs using Primary-side regulation—sacrifice regulation and efficiency. Akros delivers much better efficiency, regulation with low BOM and no Optos

TI: Highly discreet solutions with large and expensive BOM. Poor efficiency and EMI performance compared to Akros. Compare full solution BOM.

Maxim: Primary-sensing designs have poor performance. High-performance designs are very expensive with many ICs, multiple transformers and Optos

TI, Maxim and few other players have dual-channel bucks. Akros regulators have more flexibility and power management capability, and EMI benefits of integrated clocking; low external BOM.

CVBs & Reference Designs

- AS14x4_CVB_**LW**_12Vin or 48Vin (~15W)
- AS14x4_CVB_**HW**_12Vin or 48Vin (~50W)
- CVB available in Hardware mode or Software mode