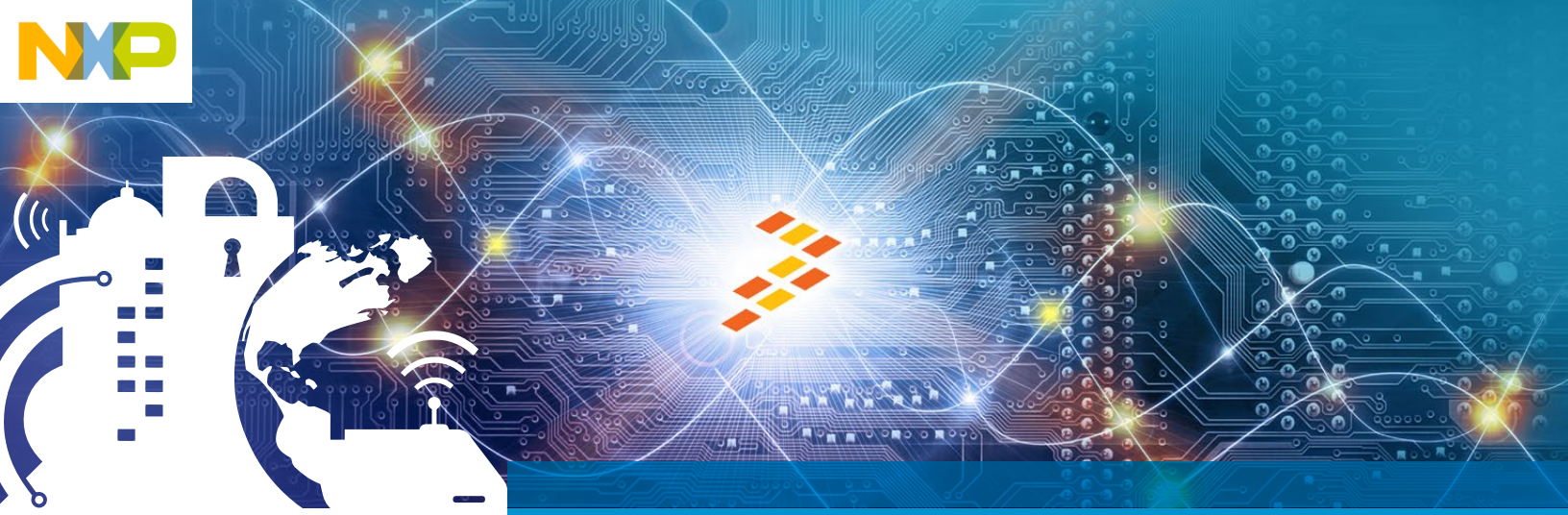


Analog Solutions—Robust, Reliable Performance

MC34VR500

Target Applications

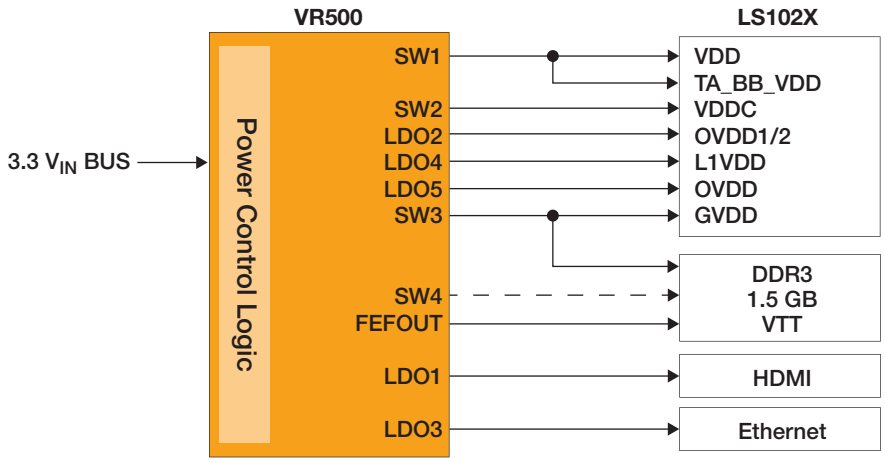
- Internet of Things (IoT) gateway
- Industrial automation and control
- M2M devices
- Mobile wireless router
- MFP printer
- Network attached storage
- Automatic teller machine (ATM)

Multi-Output DC/DC Regulator

The MC34VR500 power management solution for network processor systems is a high-efficiency, quad buck regulator with up to 4.5 A output and five user-programmable LDOs. With four buck regulators and five LDO output channels, the MC34VR500 powers more than the network processor, significantly reducing design complexity and the overall bill of materials (BOM). The highly integrated MC34VR500 output voltage, frequency and turn-on sequence is user programmable using I2C.

The MC34VR500 is ideally suited to power system solutions based on QorIQ LS1 networking communications processors with unique programmable multiple DC/DC and LDO outputs. The MC34VR500 has been incorporated into multiple QorIQ LS1 networking communications processor reference platforms. This collaboration provides platform-level solutions from a single supplier to enable faster time to market and reduced engineering effort.

34VR500 Simplified Application Block Diagram



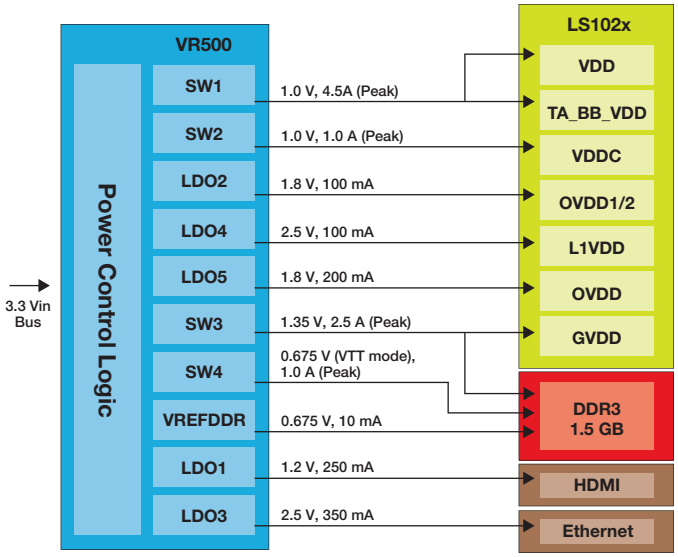
Features

- Optimized to work with QorIQ LS102x communications processors
- High full load efficiency with 91% peak
- Customizable preprogrammed output voltages, sequencing or timing available
- Dynamic regulator control of voltage, current limit, and frequency via I2C
- Forced PWM/PFM or APS operation
- Power control logic with processor interface and event detection
- Vin = 3.3 Vbus (2.8 V to 4.5 V supply)
- Four independent buck converters
- Five user programmable LDOs
- DDR reference voltage LDO
- High power 8 x 8 mm QFN wettable flank package

Freescale: A Leader in Analog Solutions

Expanding on more than 30 years of innovation, Freescale is a leading provider of high-performance products that use SMARTMOS technology combining digital, power and standard analog functions. Freescale supplies analog and power management ICs that are advancing the automotive, consumer, industrial and networking markets. Analog solutions interface with real world signals to control and drive for complete embedded systems.

MC34VR500 Multi-Output DC/DC Regulator and QorIQ LS102x Communications Processor System Block Diagram



MC34VR500 Differentiators

Features	Benefits
Four buck converters	High-efficiency, lower power dissipation, longer battery life
Five LDOs	Flexibility to power peripherals
No external resistor divider required to set output voltage	Lower external component count; Better overall Vout accuracy
I²C digital interface for programmability	On-the-fly voltage scaling for better system efficiency
PWM/PFM or APS (Auto-Pulse Skipping Mode)	Higher light load efficiency—longer battery standby time
8 x 8 mm WF-QFN power package	Excellent thermal performance and improved inspection of the solder joints during fabrication process

Documentation

Freescale Document Number	Title	Description
MC34VR500	Multi-Output DC/DC Regulator	Data Sheet
SG1002	Analog Product Selector Guide	Selector Guide
SG200	Industrial Product Selector Guide	Selector guide

Complete Enablement, Rich Ecosytem

For customer evaluation, the MC34VR500 multi-output DC/DC regulator and QorIQ LS102x communications processors will be supported by modular tools along with third-party platforms developed by Freescale's embedded board solution partners. The MC34VR500 powers the complete QorIQ LS102x IoT reference design.

All QorIQ LS series devices are supported by our extensive third-party ecosystem, the largest and most established in the communications market. In conjunction with our expertise and worldwide support infrastructure, the ecosystem helps customers accelerate their migration from both competitive solutions and from legacy Freescale devices, preserve investment costs and reduce time to market.

These products are/or may be supported by Freescale's Product Longevity Program. For Terms and Conditions and to obtain a list of available products please see **freescale.com/productlongeveity**

For more information, visit freescale.com/analog

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