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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Active
Core Processor	12V1
Core Size	16-Bit
Speed	25MHz
Connectivity	IrDA, LINbus, SCI, SPI
Peripherals	LVD, POR, PWM, WDT
Number of I/O	16
Program Memory Size	32KB (32K x 8)
Program Memory Type	FLASH
EEPROM Size	128 x 8
RAM Size	2K x 8
Voltage - Supply (Vcc/Vdd)	3.13V ~ 5.5V
Data Converters	A/D 2x10b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 125°C (TA)
Mounting Type	Surface Mount
Package / Case	32-LQFP
Supplier Device Package	32-LQFP (7x7)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/s9s12vr32f0mlc

S12 MagniV® Mixed-Signal MCUs S12VR Family

Integrated Solution for Relay Driver (e.g., Windowlift/Sunroof)

Product One-Sheet

Get Sample

Data Sheet

Tools

System in a package—Highly integrated part ideal for space-constrained relay driven DC motors on LIN Bus

Low system cost—Direct connection with battery, integrated LIN Phy, LS & HS drivers and EVDD reduce system, qualification and manufacturing cost.

High reliability—High immunity to EMI and ESD stresses, LIN 2.x compliant with +/- 8 kV ESD capability.

Enablement—Supported by comprehensive hardware and software solution, which reduces development costs and time-to-market

S12VR Specifications

Flash	16-64 KB	LS/HS Driver	2/up to 2
RAM	2 KB	V _{REG}	70 mA at 12 V
EEPROM	128-512 B	EVDD	1-ch. 5 V/20 mA (source)
Core	S12, 25 MHz	SCI/SPI	Up to 2/1
ADC	10-bit, 10-ch.	Packages	32 LQFP, 48 LQFP
HVI	4	Timer/PWM	4-ch., 16-bit/4-ch., 16-bit
LIN Phy	1	Op Range	5.5 V-18 V

Part Numbers

Part Number	Temp Range	Package
S9S12VR64AF0MLF	-40 °C to 125 °C	48 LQFP
S9S12VR64AF0MLC	-40 °C to 125 °C	32 LQFP
S9S12VR32F0MLC	-40 °C to 125 °C	32 LQFP

www.NXP.com/S12VR

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Document Number: S12VRFS REV 3

Features



Relay Driver



V_{REG} for 12 V Supply

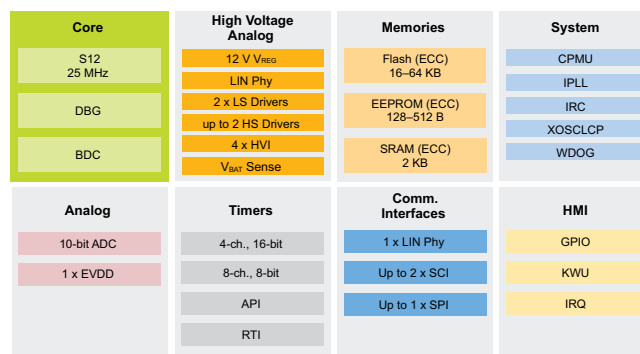


Integrated LIN Phy

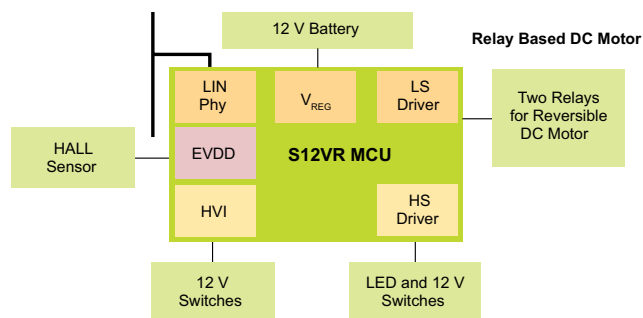


Ultra-Reliable Industrial

Product Block Diagram



Application Example Block Diagram



Product Longevity

Success Stories

- ▶ Anti-pinch window lift and sunroof
- ▶ Power lift gate
- ▶ Seat heating
- ▶ Small LIN node

Target Applications

- ▶ Anti-pinch window lift
- ▶ Sunroof
- ▶ Automatic doors
- ▶ Power lift gate
- ▶ Seat adjustment
- ▶ Seat heating
- ▶ Small LIN node

Enablement Tools

- ▶ Evaluation boards/hardware
 - S12VR64EVB
 - S12VR32EVB
 - DEVKIT-S12ZVR64
- ▶ Reference solutions
 - Anti-pinch window lift reference design
- ▶ Compiler/Debugger
 - CodeWarrior® IDE
 - Cosmic IDE
- ▶ LIN stack

