

# AUTOMOTIVE MULTICHANNEL



## Power management ICs



### Multifunctional voltage regulators for automotive applications

Designed to reduce component count, optimize space and speed up development, automotive-qualified PMICs integrate, in a single package, drivers, ADCs, switching and linear regulators, monitoring and sequencing as well as all the functions required for robust automotive applications.

Directly connected to a vehicle's battery, ST's multi-channel power management ICs allow flexible and configurable setups for multiple power supply schemes and applications in the domain of ADAS, AD, camera & radar systems as well as microcontrollers, ECUs, USB ports and infotainment clusters.

#### KEY FEATURES

- DC/DC converters/controllers
- Linear regulators
- Stand-by regulators
- Voltage supervisors
- Independent enables
- Window watchdog / reset
- High switching frequency
- I2C / SPI control bus or hardware controls
- Very low quiescent and stand-by currents
- Battery compatibility
- Thermal protection
- Load dump protection
- Integrated compensation
- Functional safety (ASIL support)

#### KEY BENEFITS

- Automotive qualification
- Complete power management solution does not require external monitoring or sequencing
- Can be used for pre- or post-regulation
- Flexibility due to output programmability

#### KEY APPLICATIONS

- ADAS and AD (camera, radar, and domain controller)
- ECUs
- Infotainment systems
- Clusters
- USB hubs and chargers

**THE FUNCTIONAL SAFETY SUPPORTING FAMILY**

A multichannel, battery-compatible, voltage regulator supporting functional safety for camera and radar systems (ADAS), processors and microcontroller-based ECUs, the L5965 includes six outputs, embeds OTP programming and is managed via SPI. It also includes a set of features to support applications that need to fulfill ASIL functional safety requirements.

To provide an alternative for low-power requirements, the STPM066S multiple voltage regulator is pin-to-pin compatible and maintains the essential safety requirements and precision required for ADAS applications.

**Device Summary**

Part number	Package	Function	$V_{in}$ (V)	$V_{out}$ (V)	$I_{out}$ (A)	Frequency	Topology	Other features
L5965	VQFPN-48	Buck 1 Controller	4 to 32	Adjustable via OTP	3 / 1.5	400 kHz	Monolithic synchronous, current mode, internal power switches	OTP programming, SPI interface, diagnostics, voltage supervisors, designed for ADAS
		Buck 2	4 to 32			2.4 kHz		
		Buck 3	3 to 5.5			2.4 kHz		
		Buck 4	3 to 5.5			2.4 kHz		
		Boost	3 to 5.5			2.4 kHz		
		LDO	3 to 5.5					
		Vref				0.02		
STPM066S	VQFPN-48	Buck	4 to 32	Adjustable via OTP	1.35 / 2.60	2.4 kHz	Monolithic synchronous, current mode, internal power switches	OTP programming, SPI interface, diagnostics, voltage supervisors, designed for ADAS
		Boost	3 to 5.5			2.4 kHz		
		LDO	3 to 5.5			0.3 / 0.6		
		Vref				0.02		
L9396	TQFP-64	Boost controller	4.5 to 19	8.5	0.3	2 MHz	Monolithic, asynchronous	SPI interface, WSS/tracking regulator, designed for ADAS, spread spectrum, diagnostics, compatible to battery, 2xHS pre-driver, WD&reset, supporting functional
		Buck1 controller	6 to 19	6.5 / 7.2	1	465 kHz		
		Buck2 / LDO1	6 to 19	5 to 0.8	1 / 0.5	465 kHz		
		LD02		5	0.25			
		LD03		3.3 / 5	0.1			
		Vref		3.3	0.02			
L9001	PowerSS0-24	Buck1	5.5 to 18	3.3 / 5 / 6	1	465 kHz	Monolithic, asynchronous, internal power switches	Voltage supervisors, enables, diagnostics, compatible to battery, WD&reset
		Buck2 / LD01	5.5 to 18	5 to 0.8	1 / 0.3	465 kHz		
		LDO	5.5 to 18	3.3 / 5	0.1			
L9758	PowerS0-36	Boost	5.5 to 26.5	8.5	2	350 kHz	Monolithic, asynchronous, internal power switches	Voltage reference, 4x protected tracking regulators
		Buck	5.5 to 26.5	5.5	2	350 kHz		
		LD01		3.3 / 5	1			
		LD02		2.6 / 3.3	1			
		LD03		1.5	1			
		ST-BY1	5.5 to 26.5	1 / 1.5	0.01			
		ST-BY2	5.5 to 26.5	2.6 / 3.3	0.01			
L5963	PowerSS036 VQFPN-48	Buck1	3.5 to 26	1 to Vin	2.5	2 MHz	Monolithic synchronous, voltage mode, internal power switches	Power goods, high-side driver, enables
		Buck2	3.5 to 26		3	2 MHz		
		LDO / ST-BY1	3.5 to 26		0.25			
L5962	PowerS036	Buck	4.1 to 27	1.2 to 8	2.5	400 kHz	Internal power switches	I2C bus for LD02, reset, 2 x HSD, enable for buck
		ST-BY		3.3 / 5	0.15			
		LD01		5 / 8.5	0.35			
		LD02		3.3 / 10	1			

