

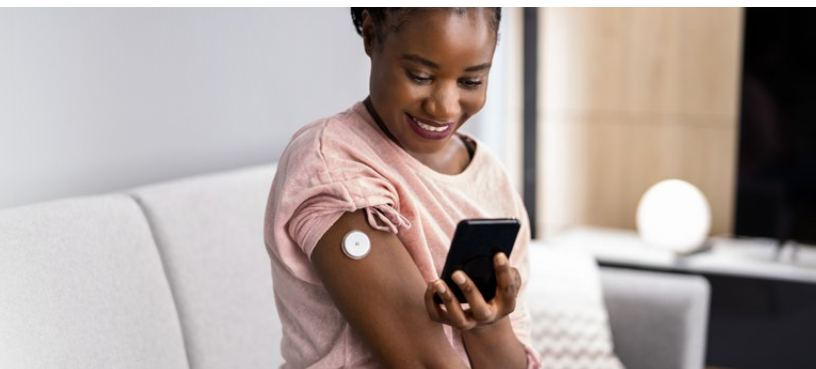


Advanced power management for industrial and IoT applications

From the plug to the processor

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Advanced power systems

Sustainable, safe and simplified

Power management is a foundational technology that drives performance across processors and peripherals in today's most demanding applications—from automotive and industrial systems to IoT and consumer electronics.

Our robust portfolio includes AC-DC power solution, highly integrated Power Management ICs (PMICs), System Basis Chips (SBCs) and wireless power solutions, all engineered to deliver optimal

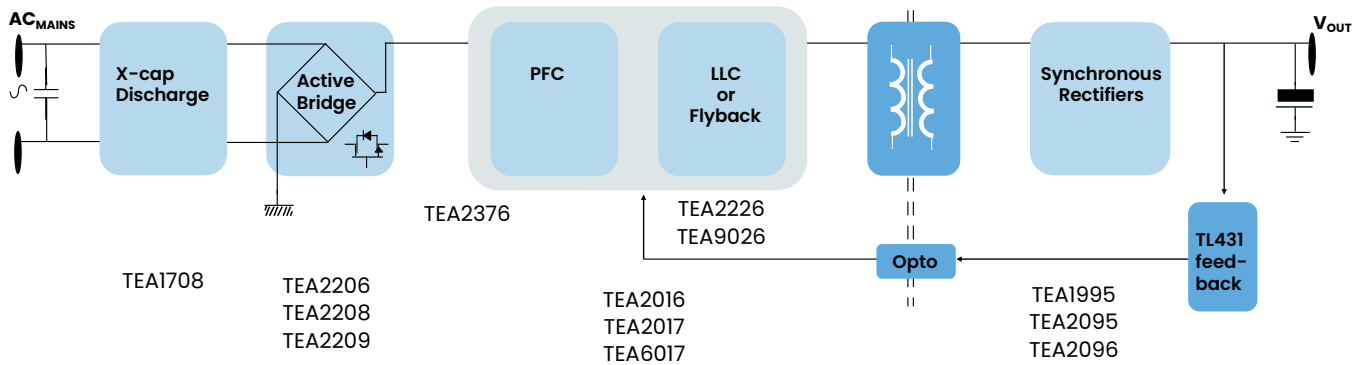
efficiency, functional robustness and performance in energy-sensitive environments. With a focus on sustainability, safety and simplicity, our advanced power technologies streamline system design and accelerate development. We deliver scalable solutions from the plug to the processor by standardizing power management hardware, safety architecture and software integration.



Together, we power a brighter, safer and cleaner future, from the plug to the processor: nxp.com/powermanagement

Power delivery overview for industrial and IoT

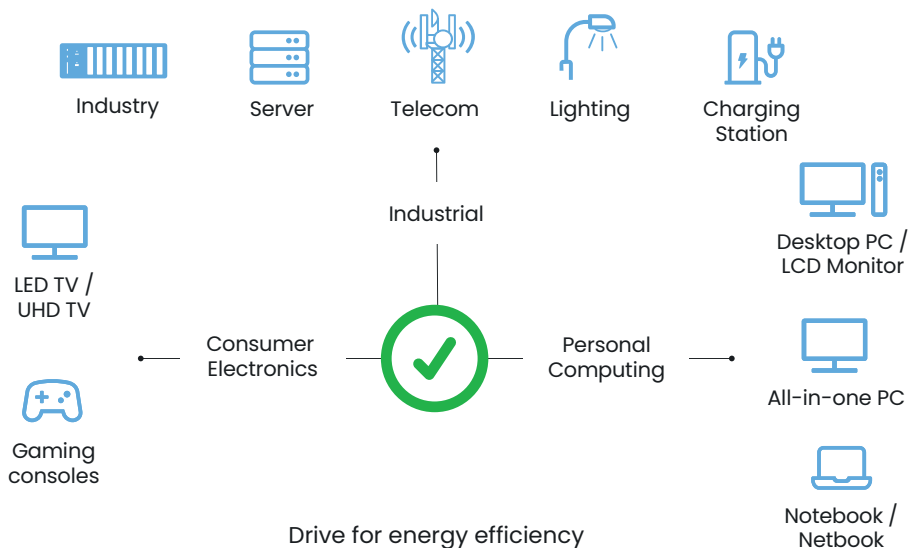
Building blocks for high-efficient cost-effective, power supply solutions



Why NXP Power Delivery

- High performance energy efficiency across all load conditions
- Wide range of power solutions
- Top-class product development with application know-how and support
- Proven product quality track record and a strong quality system
- Compliant with industry's strictest energy efficiency regulations

AC-DC power conversion – Focus applications

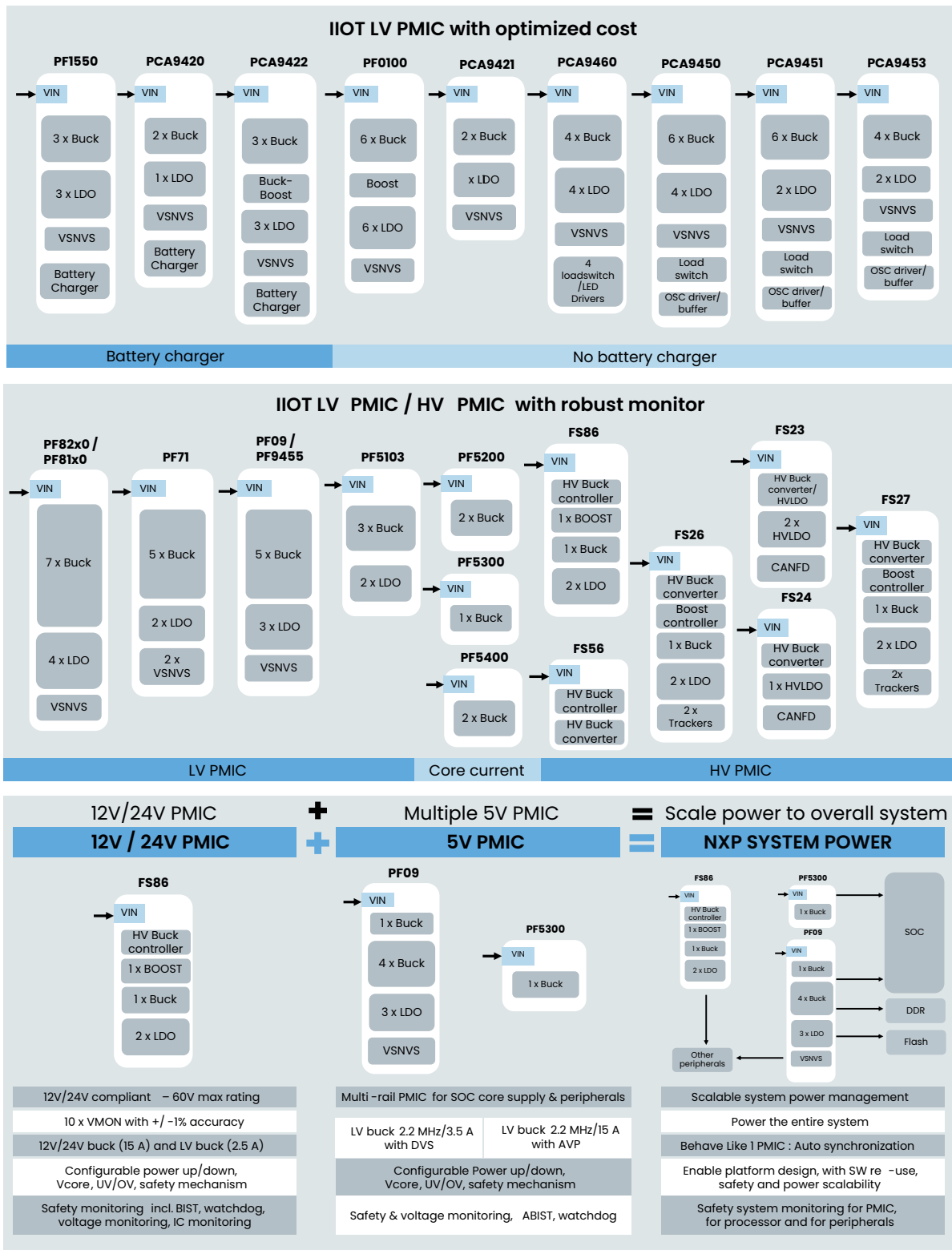


Key applications

- Adaptors for laptops and universal applications
- TV/Display/Monitor power supplies
- Industrial power, including DIN power, e-Bike, e-Tool and any kind of battery charger
- Power supply for SWITCH and PoE
- Single and multi-port type-C USB PD charger
- Desktop power supplies
- Gaming power supplies
- Medical power supplies
- LED lighting power
- Server power supplies
- Others



System power overview for industrial and IOT



Each PMIC provides efficient power delivery and special functions common to specific applications to optimize the power density and the Bill of Material(BOM). Select an FS device and any combination of PF devices to create a complete system power solution.

Industrial and IoT applications

Factory Automation

Building and Home Automation

Power and Energy

Healthcare



Industrial and IoT Advanced Power System Solutions

Market	Application	Processor	Power Management Solution
Home and Building Automation	Smart Home Appliances and Robotic	LMX91	PF9453
	HVAC, Lighting, Sensors and Thermostat	LMXRT1062	PCA9421 / FS24
	Smart Entertainment: Gaming, Audio, AR ...	LMX8M Mini, LMXRT600	PCA9450A / PCA9421
	Home and Building Control, Control panel and Voice	LMX6ULL	PF1510 / PF3000 / PF9453
	Security Access control, Video Surveillance	MCX W	PCA9421 / FS24
	Home and Building Automation AC/DC power	--	TEA2017 + TEA2095 / TEA2376 + TEA2226 + TEA2095
Factory Automation	Motion Control and Robotics	LMX95	FS56 + PF09 + PF53
	Motor Drives	LMXRT1180, LMXRT117x	PF9453 (+FS86) / FS26
	PLCs and Remote I/Os	LMX94	PF9455 + PF5302 + (2xFS56)
	Industrial Network	LMX93	PCA9451A (+FS86) / PF09 (+FS86) / PF9453 (+FS86)
	Industrial HMI	LMX8M Plus	PCA9450C (+FS56)
	Factory Automation AC/DC power	--	TEA2209 + TEA6017 + TEA2095 / TEA2209 + TEA2376 + TEA2226 + TEA2095
Healthcare	Diagnostic, Patient Monitoring	LMX95	FS56 + PF09 + PF53
	Personal Care	MCX N, LMXRT1060	PCA9421
	Medical Imaging and Instruments / Pharma	LMX93	PCA9451A (+FS86) / PF09 (+FS86) / PF9453 (+FS86)
	Hearing Aids and Cochlear Implants	NXH2004, NXH3675	PCA9420
	Wellness and Fitness	LMXRT500, LMXRT700	PCA9420 / PCA9422
	Healthcare AC/DC power	--	TEA2016 + TEA2095 / TEA2017 + TEA2095
Power and Energy	Power Conversion > 2.5KW	MC56F8X	FS24
	Power Conversion < 2.5KW	--	TEA2017 + TEA2096 / TEA2376 + TEA2226 + TEA2096
	ESS (Energy Storage System - BMS)	S32K3, LPC55XX	FS26 / FS24
	EVSE (EV Supply Equipment - HMI)	LMX93	PCA9451A (+FS86) / PF09 (+FS86) / PF9453 (+FS86)
	Energy management	LMX8M Nano	PCA9450B
	Metering	MCX N	PCA9421 / FS24

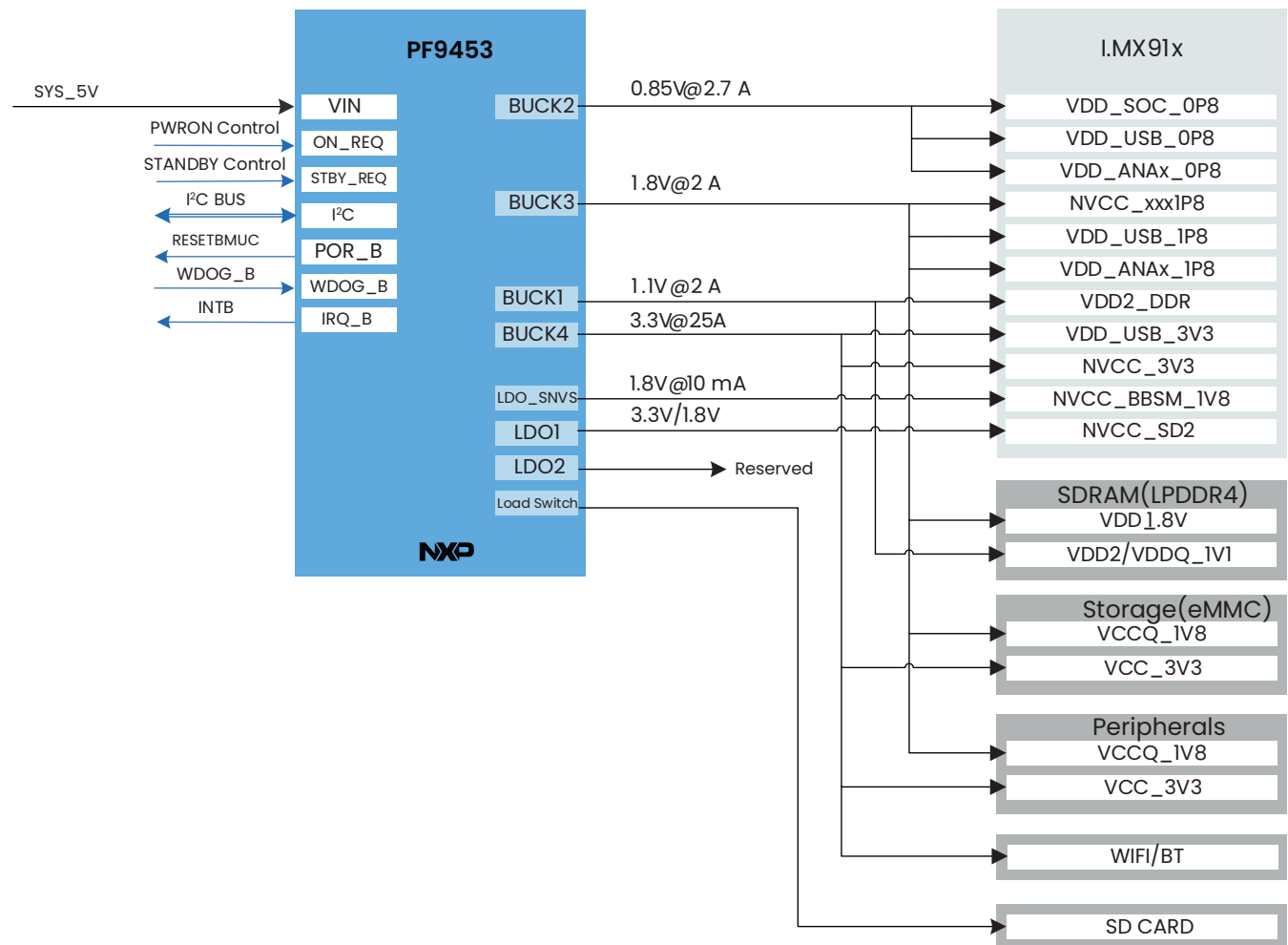
Device category: FS = 12V/24V/48V PMIC, PF and PCA = 5V PMIC, TEA = AC / DC Resonant Power

() optional device, application dependent

More information on nxp.com/powermanagement [Bylink](#) 

Home and building automation

PF9453 – System power solution for smart home appliances and robotics



Learn more about [PF9453](#)

Home and building automation

PF9453 – System power solution

Power flexibility and scalability

- 4 Bucks, Buck2 up to 2.7 A with DVS
- 3 LDOs with active discharge resistors, LDO2 up to 250 mA
- OTP selectable voltages and power up / down sequencing
- OTP-versions for i.MX 91/i.MX 93, plus NON-NXP MCU/ MPU

Differentiation

- 400 mA load-switch
- DBUS debounce filter
- 32.768 kHz crystal oscillator driver and buffer output
- Monitor fault condition
- Watchdog reset input
- 2.48 mm * 2.48 mm WLCSP
- 5 mm * 5 mm QFN

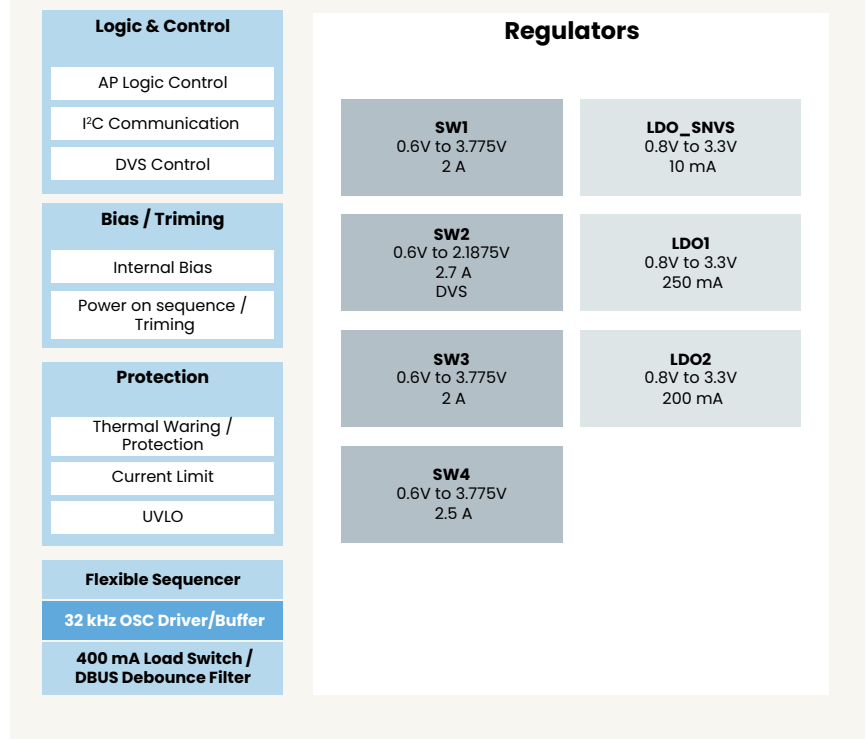
System management

- Power on/off control
- PMIC reset control
- Standby/run mode control
- Fm+ 1 MHz I²C interface

Other applications

- Factory automation
- Healthcare
- Power and energy

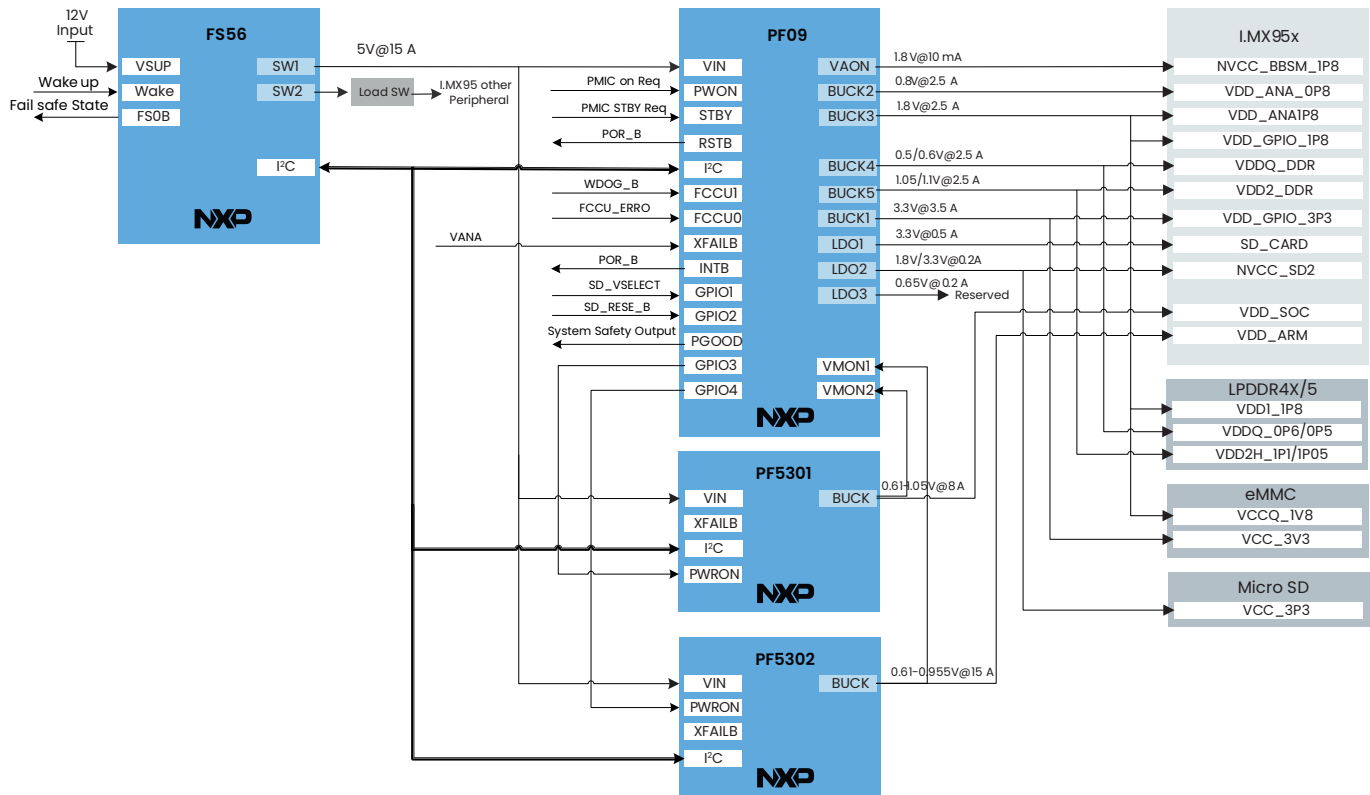
PF9453 Functional Block Diagram



Learn more about [PF9453](#)

Factory automation

System power solution for motion control and robotics



Learn more about [PF09/FS56/PF5301/PF5302](#)

Factory automation

PF09 – System power solution

Power flexibility and scalability

- 5 Bucks with DVS, Buck1 up to 3.5 A, Bucks multi-phase setting
- 4 LDOs with load switch operation, LDO1 up to 500 mA
- MTP selectable voltages and power up/down sequencing
- MTP-versions for i.MX95/ i.MX93, plus NON-NXP MCU/ MPU

Differentiation

- Wide Buck output voltage from 0.3V~3.3V to support LPDDR5
- Wide LDO output voltage from 0.65V~3.3V
- IEC 61508 SIL2
- Voltage monitor
- MCU fault monitor
- Watchdog management
- System self-test
- Safety output
- Minimize EMC with spread spectrum, frequency tuning, frequency sync
- Thermal operation up to $T_j = 150\text{ }^{\circ}\text{C}$
- Optimized size through advanced architecture, < 200 mm² component area
- AMUX feature
- Power-up/down synchronization
- 8 mm * 8 mm QFN

System management

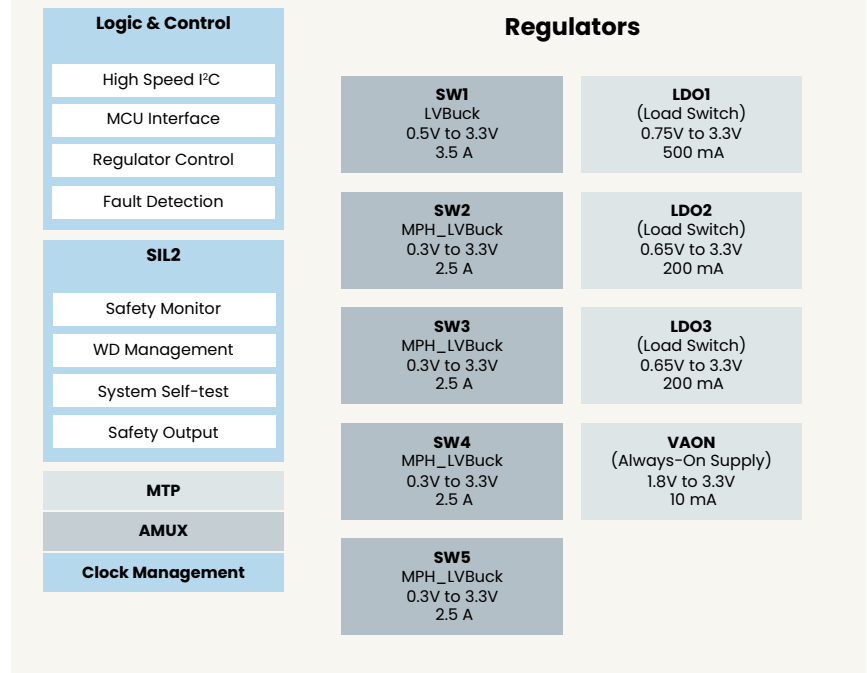
- Power on/off control
- Standby/run mode control
- PMIC interrupt signal
- GPIOs
- High speed I²C interface

Other applications

- Home and building automation
- Healthcare
- Power and energy

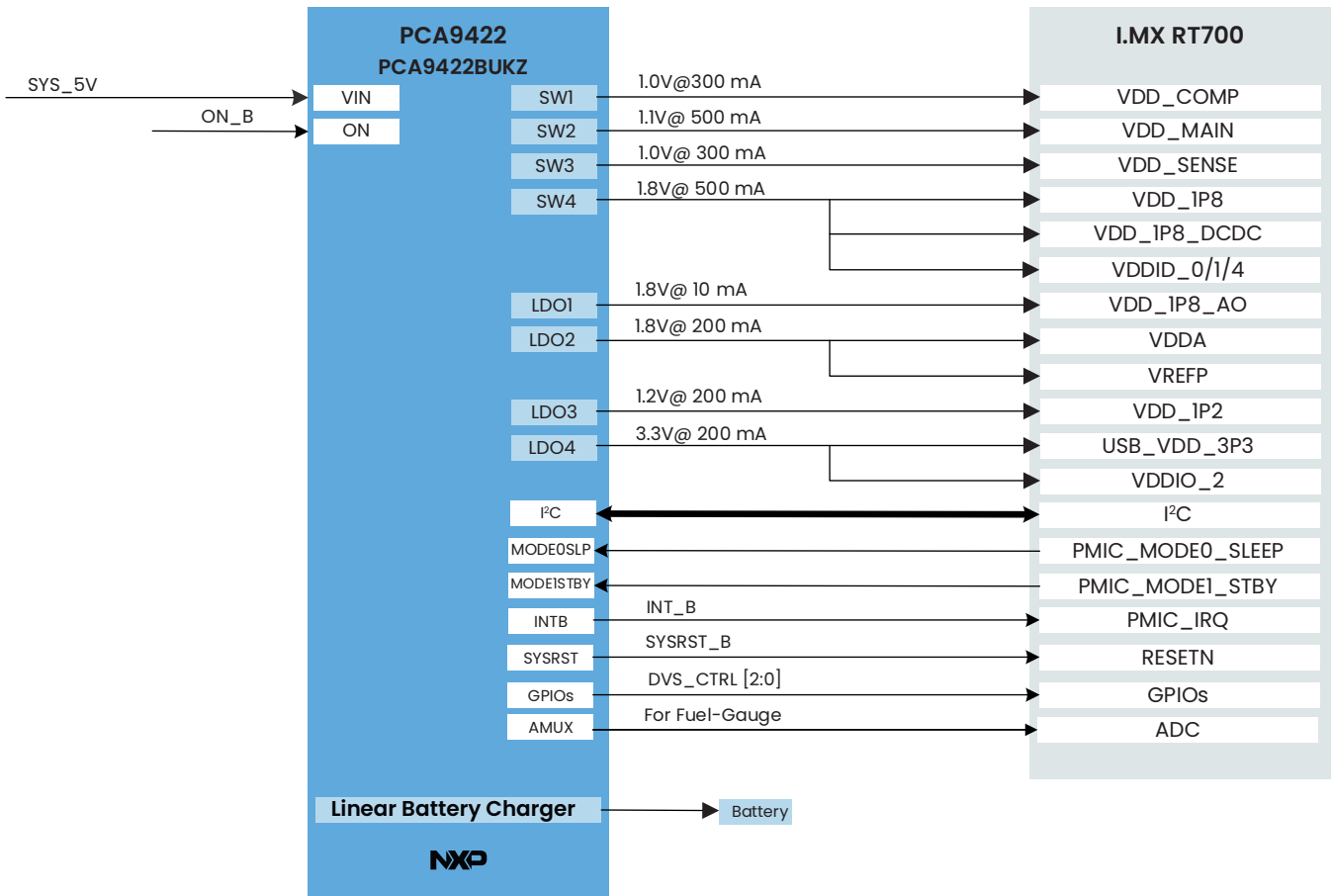
Learn more about [PF09](#)

PF09 Functional Block Diagram



Healthcare

PCA9422 – System power solution for wellness and fitness



Learn more about [PCA9422](#)

Healthcare

PCA9422 – System power solution

Power flexibility and scalability

- 3 Bucks with DVS, Buck2 up to 500 mA
- 1 Buck-boost up to 500 mA
- 4 LDOs up to 200 mA, with load switch operation
- OTP selectable voltages and power up/down sequencing
- OTP-versions for i.MXRT500/ i.MXRT600/ i.MXRT700, plus NON-NXP MCU/MPU

Differentiation

- Low quiescent with ship mode
- High efficiency Buck from light load to heavy load, with low power mode
- Linear battery charger up to 640 mA
- Comes with software-based battery gauging FLEXGAUGE™
- Vin pin 26V DC tolerance with OVP
- Monitor fault condition
- Fast DVS control
- 2.90 mm * 3 mm WLCSP

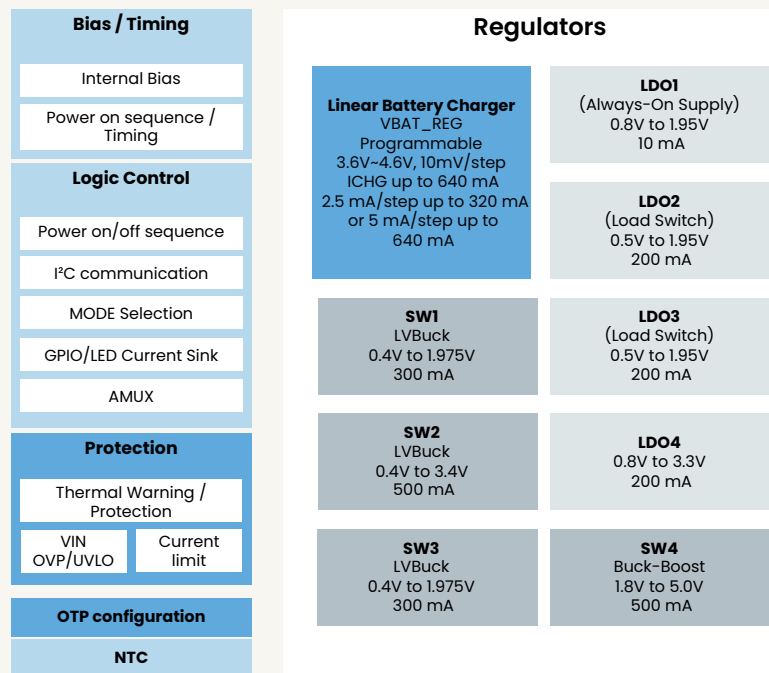
System management

- Power on/off control
- Fast sleep/standby mode switch
- PMIC interrupt signal
- PMIC reset control
- GPIO/LED sink
- Fm+ 1 MHz I²C interface

Other applications

- Home and building automation
- Factory automation
- Power and energy

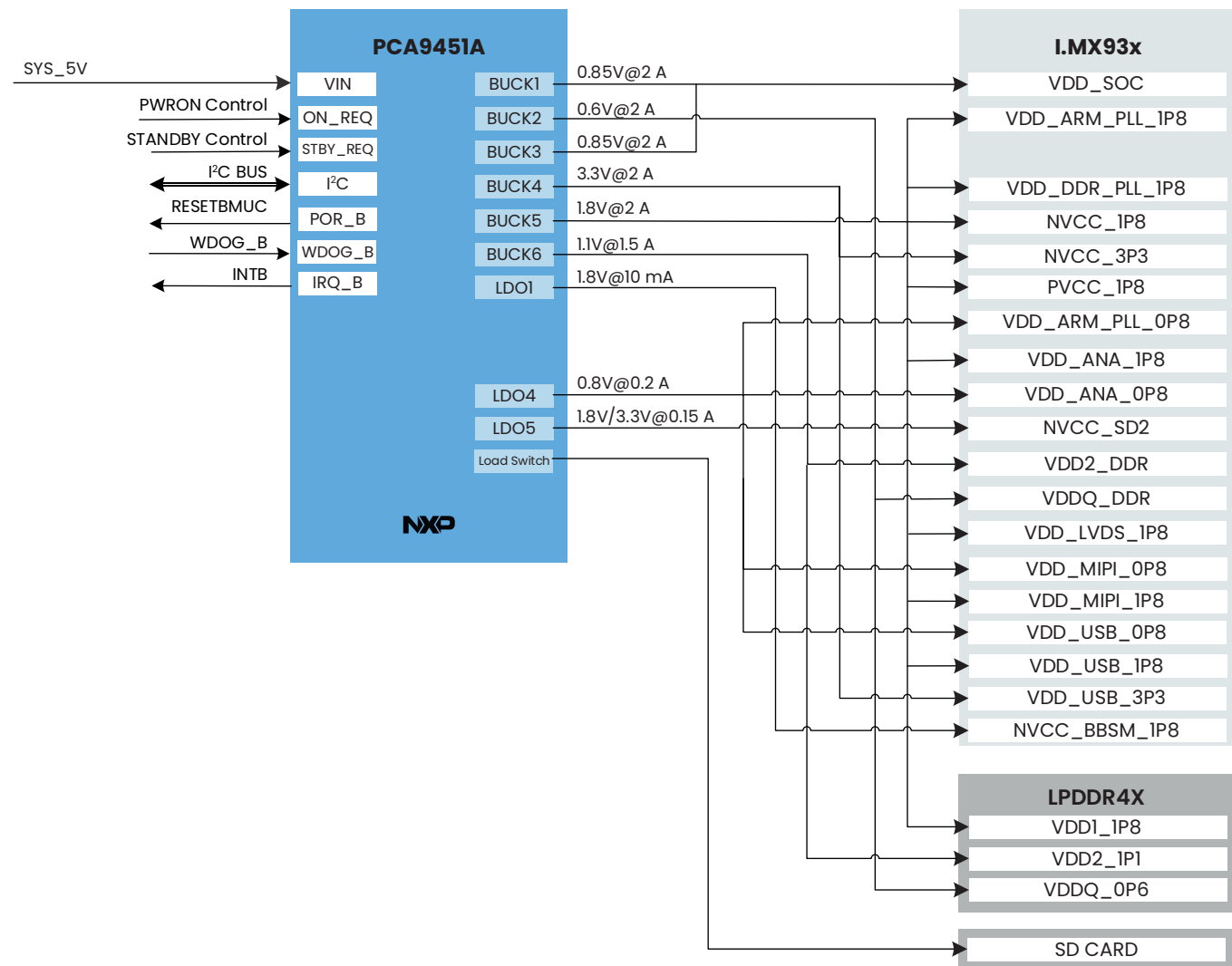
PCA9422 Functional Block Diagram



Learn more about [PCA9422](https://www.nxp.com/products/power-management/PMIC/PCA9422)

Power and energy

PCA9451A - System power solution for EVSE



Learn more about [PCA9451A](https://www.nxp.com/products/power-management/converters/switching/buck-converters/pca9451a)

Power and energy

PCA9451A – System power solution

Power flexibility and scalability

- 6 Bucks with DVS, remote sense capability, Buck1+Buck3 dual phase up to 4 A
- 3 LDOs, LDO4 up to 200 mA
- LPDDR4X and LPDDR4 supported
- Power up/down sequencing
- OTP-versions for all i.MX93 part numbers

Differentiation

- 400 mA load-switch
- I²C level translator
- 32.768 kHz crystal oscillator driver and buffer output
- Watchdog reset input
- 7 mm * 7 mm HVQFN

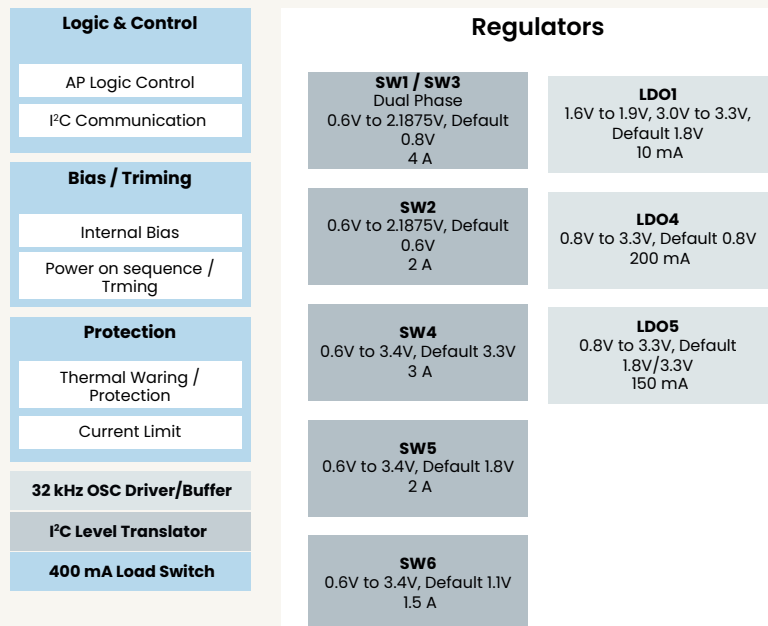
System management

- Power on/off control
- Standby/run mode control
- PMIC reset control
- POR_B reset signal
- PMIC Interrupt signal
- Monitor fault condition
- Fm+ 1 MHz I²C interface

Other applications

- Home and building automation
- Factory automation
- Healthcare

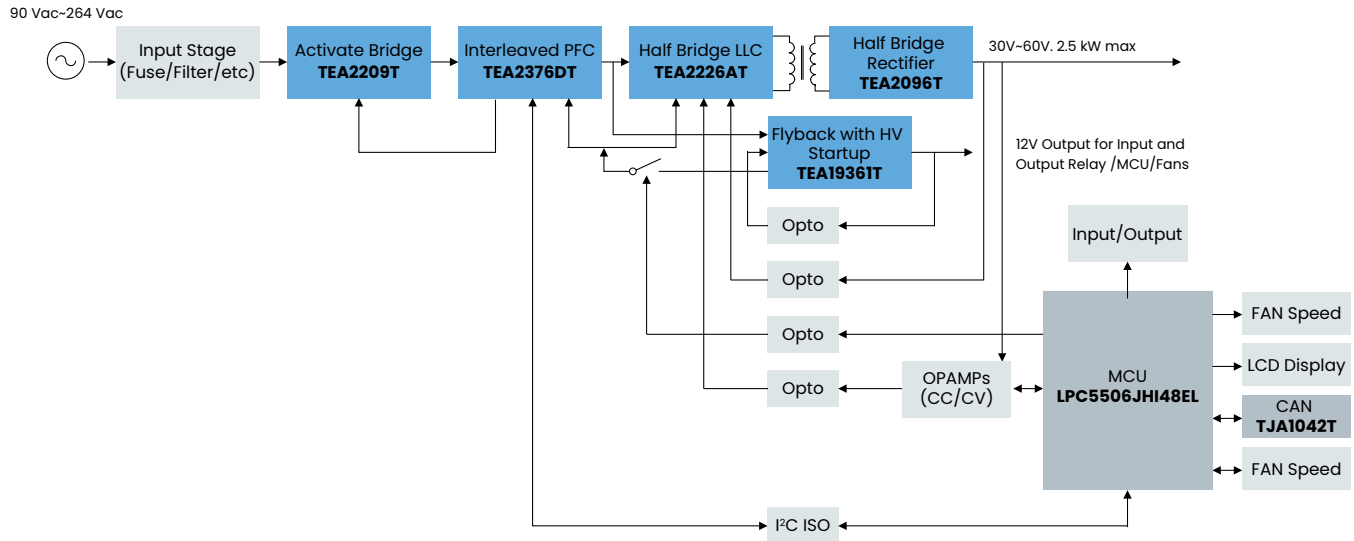
PCA9451A Functional Block Diagram



Learn more about [PCA9451A](#)

Power and energy

TEA2376 - AC-DC power solution for 2.5 KW power conversion



Learn more about [TEA2209T](#), [TEA2226](#), [TEA2096](#), [TEA19361](#) & [TEA2376](#)

Power and energy

TEA2376 - Digital programmable interleave PFC

Power flexibility and scalability

- Digital configurable Interleaved PFC
- Smallest package, SO10
- High configurability via MTP
- Low external BOM count
- QR/DCM with valley switching
- Good interleaving performance
- Best PF/ THD with phase shift
- Best efficiency with frequency control
- Programmable mode transitions (Phase adding, shedding, burst mode) with main compensation
- Various protections; 2nd OVP, coil short, diode short, phase fail, inrush protection, int and ext-OTP

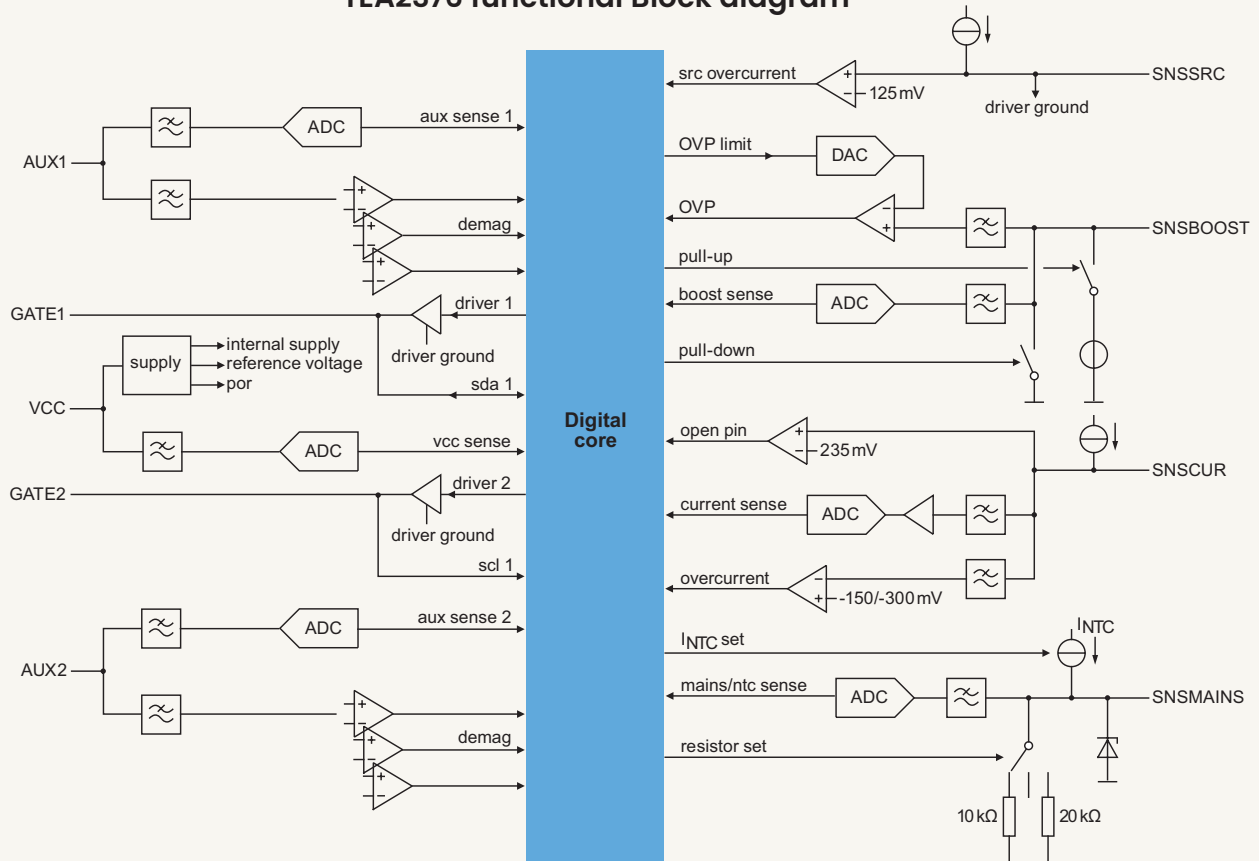
Benefits interleaved technology

- Lower high frequency ripple for input current and output voltage
- Efficiency improvement
- Lower HF ripple current improves electrolytic capacitor life
- Smaller differential mode EMI filter
- Low profile height
- Better heat distribution

Other applications

- Home and building automation
- Factory automation
- Healthcare

TEA2376 functional Block diagram



Learn more about [TEA2376](#)

Multi-vendor processor attachment

	Multi-vendor processor	NXP PMIC solution
NXP processors	IMX95	FS56+PF09+PF53
	IMX94	PF9455+PF53
	IMX93	PCA9451A / PF09 / PF9453
	IMX91	PF9453
	IMX8Q	PF81
	IMX8M Mini / Nano / Plus	PCA9450A / B / C
	IMX8 ULP	PCA9460
	IMX6 ULL	PF1550 / PF9453 / FP3000
	IMXRT117x / 118x	PF9453 / FS26
	IMXRT102x / 105x / 106x	PCA9421 / FS24
	IMXRT700	PCA9422
	IMXRT500 / 600	PCA9420 / 9421
	MCX	PCA9421 / FS24
	NXH3675 / NXH2004	PCA9420 / 9421
Multivendor processors	Ambarella CV22	PF81
	Ambarella CV25	PF81
	Ambarella CV5	PF56+PF71+PF52
	Ambarella CV52	PF56+PF71+PF5024
	Ambarella CV75	PF81
	Ambarella NI	PF71
	Ambiq Apollo3 family	PCA9422
	Ambiq Apollo4 family	PCA9420 / PCA9422
	Ambiq Apollo5 family	PCA9422
	Altera Agilex F	3*FS56+PF81+PF5024+PF52
	Altera Agilex 5E	PF53+PF9453
	Altera Arria10	PF53+PF71
	Altera CycloneV	2*PF52+2*PF5024+PF5023+PF53
	Altera CycloneV LP	PF5103
	Altera CycloneV GX	PF5103
	Altera Stratix10	PF5123+PF52
	Artosyn ARS45	FS56+2*PF5024+PF52
	Bestechnic BES2700	FS56+PF5103
	Bestechnic BES2800	FS56+PF81
	Blacksesame AI000/AI000L	PF9453
	Espressif ESP32	PCA9422
	Ingenic X2000	PCA9420
	Microchip SAMA5DX	PF81
	Nuvoton MA35D1	PF15X0 / PCA9421
	Nuvoton MA35H0	PF9453
	Realtech RTD1619B	PCA9460
	Renesas RZ / G2L	PCA9460
	Renesas RZ / N2L	PF09
	Renesas RZ / T2M	PF81
	Rockchip PX30	PCA9421
	Sifli SF32LB567	PF9453
	ST STM32F / U / H	PCA9422
	ST STM32W / L	PCA9460 / FS23 / FS24
	Synaptics SL1620	PCA9420 / PCA9421
	Witmem WTM-8600	PF9453
	Xilinx ZU4	PF81
	Xilinx Zynq-7000	PF5103+PF9453
	Zhaoxin KX6000	PF0100
		PF81

More information [here](#)

5V PMIC

	Features	PCA9420	PCA9421	PCA9422	PCA9450
Power Management Features	Buck	1*(0.5V~1.5V or fixed 1.8V / 250 mA) 1*(1.5V~2.1V or 2.7V~3.3V / 500 mA)	1*(0.5V~1.5V or fixed 1.8V / 250 mA) 1*(1.5V~2.1V or 2.7V~3.3V / 500 mA)	2*(0.4V~1.975V / 500 mA) 1*(0.4V~3.4V / 500 mA)	3*(0.6V~2.1875V / 3 A) 1*(0.6V~3.4V / 3 A) 2*(0.6V~3.4V / 2 A)
	Buck-Boost/Boost	--	--	1*(1.8V~5.0V / 500mA)	--
	LDO	1*(1.70V~1.90V / 1 mA, always-on) 1*(1.5V~2.1V or 2.7V~3.3V / 250 mA)	1*(1.70V~1.90V / 1 mA, always-on) 1*(1.5V~2.1V or 2.7V~3.3V / 250 mA)	1*(0.8V~3.0V / 10 mA, always-on) 2*(0.5V~1.95V / 200 mA) 1*(0.8V~3.3V / 200 mA)	1*(1.6V~1.9V or 3.0V~3.3V / 10 mA, always-on) 1*(0.8V~1.15V / 10 mA, always-on) 1*(0.8V~3.3V / 300 mA) 1*(0.8V~3.3V / 200 mA) 1*(0.8V~3.3V / 150 mA)
	Others	--	--	2* 200 mA LS	1* 400 mA LS
	Li-Ion Battery charger+NTC	Yes, 315 mA	--	Yes, 640mA	--
Safety Features	Fit for FuSa	--	--	--	--
	Voltage monitor	UV	UV	UV	UV
	Watchdog	Window Watchdog	Window Watchdog	Window Watchdog	--
	ABIST/LBIST	--	--	--	--
	CRC on Communication	--	--	--	--
	Safety output	--	--	--	--
System Features	Operating Voltage	2.5V~5.5V	2.5V~5.5V	2.5V~5.5V	2.7V~5.5V
	Ambient Temp Range	-40 °C~85 °C	-40 °C~85 °C	-40 °C~85 °C	-40 °C~105 °C
	GPIO	1.8V	1.8V	1.8V / 3.3V	1.8V / 3.3V
	I ² C Level Translator	--	--	--	Yes
	32.768 Khz Crystal oscillator driver	--	--	--	Yes
	AMUX	--	--	Yes	--
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	--	--	--	--
	Package (mm)	HVQFN24(3 mm x 3 mm x 0.85 mm) or WLCSP25(2.09 mm x 2.09 mm x 0.525 mm)	HVQFN24(3 mm x 3 mm x 0.85 mm) or WLCSP25(2.09 mm x 2.09 mm x 0.525 mm)	WLCSP49(2.90 mm x 3.00 mm x 0.57 mm)	HVQFN56(7 mm x 7 mm x 0.85 mm)

5V PMIC (cont.)

	Features	PCA9451	PCA9460	PF9453 CSP	PF9453 QFN
Power Management Features	Buck	2*(0.65V~2.2375V / 2 A) Dual phase 1*(0.6V~2.1875V / 2 A) 1*(0.6V~3.4V / 3 A) 1*(0.6V~3.4V / 2 A) 1*(0.6V~3.4V / 1.5 A)	2*(0.6V~3.4V / 1 A) 2*(0.6V~2.1875V / 1 A)	2*(0.6V~3.775V / 2 A) 1*(0.6V~2.1875V / 2 A) 1*(0.6V~3.775V / 2.5 A)	2*(0.6V~3.775V / 2 A) 1*(0.6V~2.1875 V / 2.7 A) 1*(0.6V~3.775V / 2.5 A)
	Buck-Boost/Boost	--	--	--	--
	LDO	1*(1.6V~1.9V or 3.0V~3.3V / 10 mA, always-on) 1*(0.8 V~3.3 V / 200 mA) 1*(0.8 V~3.3 V / 150 mA)	1*(0.8V~3.3V / 10 mA, always-on) 1*(0.6V~1.95V / 250 mA) 3*(0.8V~3.3V / 250 mA)	1*(0.8V~3.0V / 10 mA, always-on) 1*(0.8V~3.3V / 250 mA)	1*(1.2V~3.4V / 10 mA, always-on) 1*(0.8 V~3.3V / 250 mA) 1*(0.5 V~1.95V / 200 mA)
	Others	1* 400 mA LS	4*300 mA LS / 4*LED Driver	1* 400 mA LS	1* 400 mA LS
	Li-Ion Battery charger+NTC	--	--	--	--
Safety Features	Fit for FuSa	--	--	--	--
	Voltage monitor	UV	UV	UV	UV
	Watchdog	--	--	--	--
	ABIST/LBIST	--	--	--	--
	CRC on Communication	--	--	--	--
	Safety output	--	--	--	--
System Features	Operating Voltage	2.7V~5.5V	2.7V~5.5V	2.7V~5.5V	2.7V~5.5V
	Ambient Temp Range	-40 °C~105 °C	-40 °C~85 °C	-40 °C~85 °C	-40 °C~105 °C
	GPIO	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V
	I ² C Level Translator	Yes	--	--	--
	32.768 Khz Crystal oscillator driver	Yes	--	Yes	Yes
	AMUX	--	--	'--	'--
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	--	--	--	--
	Package (mm)	HVQFN56(7 mm x 7 mm x 0.85 mm)	WLCSP42(2.86 mm x 2.46 mm x 0.525 mm)	WLCSP36(2.48 mm x 2.48 mm x 0.53 mm)	HVQFN(5 mm x 5 mm)

PF8150 to replace PF8100 by Q1 2026

5V PMIC (cont.)

	Features	PF9455(NPI)	PF09	PF0100	PF0200
Power Management Features	Buck	1*(0.5V~3.3V / 3.5 A) 2*(0.3V~3.3V / 2.5 A) 2*(0.3V~3.3V / 1.5 A)	1*(0.5V~3.3V / 3.5 A) 4*(0.3V~3.3V / 2.5 A)	1*(0.3V~1.875V / 2.5 A) 1*(0.3V~1.875V / 2 A) 1*(0.4V~3.3V / 2 A or 1.2V~3.3V / 2.5 A) 2*(0.4V~3.3V / 1.25 A) 1*(0.4V~3.3V / 1 A)	1*(0.3V~1.875V / 2.5 A) 1*(0.4V~3.3V / 1.5 A) 2*(0.4V~3.3V / 1.25 A)
	Buck-Boost/Boost	--	--	1*(5V~5.15V / 600 mA)	1*(5V~5.15V / 600 mA)
	LDO	1*(1.8V~3.3V / 10 mA, always-on) 1*(0.75V~3.3V / 500 mA) 2*(0.65V~3.3V / 200 mA)	1*(1.8V~3.3V / 10 mA, always-on) 1*(0.75V~3.3V / 500 mA) 2*(0.65V~3.3V / 200 mA)	1*(1V~3V / 400 μ A, always-on) 1*(0.8V~1.55V / 100 mA) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA) 1*(1.8V~3.3V / 200 mA)	1*(1V~3V / 400 μ A, always-on) 1*(0.8V~1.55V / 100 mA) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA) 1*(1.8V~3.3V / 200 mA)
	Others	2* 200 mA LS 1* 500 mA LS	2* 200 mA LS 1* 500 mA LS	Coin-cell charger	Coin-cell charger
	Li-Ion Battery charger+NTC	--	--	--	--
Safety Features	Fit for FuSa	Yes, SIL2	Yes, SIL2	--	--
	Voltage monitor	OV/UV; Ext 2 monitors; FCCU	OV/UV; Ext 2 monitors; FCCU	UV	UV
	Watchdog	Window Watchdog	Window Watchdog	--	--
	ABIST/LBIST	ABIST/LBIST	ABIST/LBIST	--	--
	CRC on Communication	Yes	Yes	--	--
	Safety output	FS0B/ PGOOD	FS0B/ PGOOD	--	--
System Features	Operating Voltage	2.7V~5.5V	2.7V~5.5V	2.85V~4.5V	2.8V~4.5V
	Ambient Temp Range	-40 °C~105 °C	-40 °C~105 °C	-40 °C~85 °C/105 °C	-40 °C~85 °C/105 °C
	GPIO	0.4V~5.5V	0.4V~5.5V	1.8V/3.3V	1.8V/3.3V
	I ² C Level Translator	--	--	--	--
	32.768 Khz Crystal oscillator driver	--	--	--	--
	AMUX	Yes	Yes	--	--
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	Yes	Yes	--	--
	Package (mm)	HVQFN56(8 mm x 8 mm)	HVQFN56(8 mm x 8 mm)	QFN56(8 mm x 8 mm x 0.85 mm)	QFN56(8 mm x 8 mm x 0.85 mm)

5V PMIC (cont.)

	Features	PF1510	PF1550	PF3000	PF3001
Power Management Features	Buck	2*(0.6V~1.3875V or 1.1V~3.3V / 1 A) 1*(1.8V~3.3V / 1 A)	2*(0.6V~1.3875V or 1.1V~3.3V / 1 A) 1*(1.8V~3.3V / 1 A)	1*(0.7V~1.425V or 1.8V or 3.3V / 1 A) 1*(0.7V~1.475V / 1.75 A) 1*(1.5V~1.85V or 2.5V~3.3V / 1.25 A) 1*(0.9V~1.65V / 1.5 A)	1*(0.7V~1.425V or 1.8V or 3.3V / 2.75 A) 1*(1.5V~1.85V or 2.5V~3.3V / 1.25 A) 1*(0.9V~1.65V / 1.5 A)
	Buck-Boost/Boost	--	--	1*(5V~5.15V / 600 mA)	--
	LDO	1*(3V / 2 mA, always-on) 2*(0.75V~1.5V or 1.8V~3.3V / 300 mA) 1*(1.8V~3.3V / 400 mA)	1*(3V / 2mA, always-on) 2*(0.75V~1.5V or 1.8V~3.3V / 300 mA) 1*(1.8V~3.3V / 400 mA)	1*(1V~3V / 1 mA, always-on) 1*(1.8V~1.85V or 2.85V~3.3V / 100 mA) 1*(2.85V~3.3V / 350 mA) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA)	1*(1V~3V / 1mA, always-on) 1*(1.8V~1.85V or 2.85V~3.3V / 100 mA) 1*(2.85V~3.3V / 350 mA) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA)
	Others	USB_PHY LDO (3.3V or 4.9V / 60 mA); VREFDDR LDO (0.45V~0.9V / 10 mA); Coin-cell charger	USB_PHY LDO (3.3V or 4.9V / 60 mA); VREFDDR LDO (0.45V~0.9V / 10 mA); Coin-cell charger	Coin-cell charger	Coin-cell charger
	Li-Ion Battery charger+NTC	--	yes, 1000mA	--	--
Safety Features	Fit for FuSa	--	--	--	--
	Voltage monitor	--	--	UV/OV	UV/OV
	Watchdog	window watchdog	window watchdog	--	--
	ABIST/LBIST	--	--	--	--
	CRC on Communication	--	--	--	--
	Safety output	--	--	--	--
System Features	Operating Voltage	2.65V~6.0V	2.65V~6.0V	2.8V~5.5V	2.8V~5.5V
	Ambient Temp Range	-40 °C~85 °C/105 °C	-40 °C~85 °C/105 °C	-40 °C~85 °C/105 °C	-40 °C~85 °C/105 °C
	GPIO	1.8V / 3.3V	1.8V / 3.3V	1.8 V/ 3.3V	1.8V / 3.3V
	I ² C Level Translator	--	--	--	--
	32.768Khz Crystal oscillator driver	--	--	--	--
	AMUX	--	--	--	--
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	--	--	--	--
	Package (mm)	HVQFN406(5 mm x 5 mm x 0.85 mm)	HVQFN40(5 mm x 5 mm x 0.85 mm)	QFN48 (7 mm x 7 mm x 0.85 mm)	QFN48 (7 mm x 7 mm x 0.85 mm)

5V PMIC (cont.)

	Features	VR500	VR5100	PF5103(NPI)	PF0300(NPI)
Power Management Features	Buck	1*(0.625V~1.875V / 4.5 A) 1*(0.625V~3.3V / 2 A) 1*(0.625V~3.3V / 2.5 A)	1*(0.7V~1.425V or 1.8V or 3.3V / 3.8 A) 1*(1.5V~1.85V or 2.5V~3.3V / 1.25 A) 1*(0.9V~1.65V / 1.5 A)	3*(0.5V~3.3V / 3.5V)	3*(0.5V~3.3V / 3.5 A)
	Buck-Boost/Boost	--	1*(5V~5.15V / 600 mA)	--	--
	LDO	1*(1V~3V / 400μA, always-on) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA) 1*(1.8V~3.3V / 200 mA)	1*(1V~3V / 1mA, always-on) 1*(2.85V~3.3V / 350 mA) 1*(0.8V~1.55V / 250 mA) 1*(1.8V~3.3V / 350 mA)	1*(0.75V~3.3V / 200 mA) 1*(0.75V~3.3V / 500 mA)	1*(0.75V~3.3V / 500 mA)
	Others	--	Coin-cell charger		--
	Li-Ion Battery charger+NTC	--	--	--	--
Safety Features	Fit for FuSa	--	--	Yes	Yes
	Voltage monitor	UV	UV/OV	UV/OV	UV/OV
	Watchdog	--	--	Simple/challenger	Simple
	ABIST/LBIST	--	--	ABIST	ABIST
	CRC on Communication	--	--	Yes	Yes
	Safety output	--	--	PGOOD	PGOOD
System Features	Operating Voltage	2.8V~4.5V	2.8V~4.5V	2.7V~5.5V	2.7V~5.5V
	Ambient Temp Range	-40 °C~105 °C	-40 °C~105 °C	-40 °C~125 °C	-40 °C~+125 °C
	GPIO	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V
	I ² C Level Translator	--	--	--	--
	32.768 Khz Crystal oscillator driver	--	--	--	--
	AMUX	--	--	--	--
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	--	--	Yes	Yes
	Package (mm)	QFN56 (8 mm x 8 mm x 0.85 mm)	QFN48 (7 mm x 7 mm x 0.85 mm)	HWQFN28 (4.5 mm x 4.5 mm x 0.68 mm)	HWQFN28 (4.5 mm x 4.5 mm x 0.68 mm)

5V PMIC (cont.)

	Features	PF5113(NPI)	PF5123(NPI)	PF5200	PF5300
Power Management Features	Buck	1*(0.8V or 0.825V or 0.9V or 1.2V / 2.6 A) 1*(1.3V or 1.5V or 1.8V or 2.3V or 2.5V or 3.3V / 3.5 A) 1*(1.1V or 1.3V or 1.5V or 2.5V or 3.3V / 2.6 A)	3*(0.5V~3.3V / 3.5 A)	2*(0.6V~1.2V / 8 A)	PF5300: 1*(0.5V~1.2V / 12 A) PF5301: 1*(0.5V~1.2V / 8 A) PF5302: 1*(0.5V~1.2V / 15 A)
	Buck-Boost/Boost	--	--	--	--
	LDO	1*(1.8V~3.3V / 200 mA) 1*(1.8V~3.3V / 250 mA)	--	--	--
	Others	--	--	--	--
	Li-Ion Battery charger+NTC	--	--	--	--
Safety Features	Fit for FuSa	Yes	Yes	Yes	Yes
	Voltage monitor	UV/OV	UV/OV	UV/OV	UV/OV
	Watchdog	Simple/challenger	Simple/challenger	Simple	Simple/challenger
	ABIST/LBIST	ABIST	ABIST	ABIST	ABIST/LBIST
	CRC on Communication	Yes	Yes	Yes	Yes
	Safety output	PGOOD	PGOOD	PGOOD	PGOOD
System Features	Operating Voltage	2.7V~5.5V	2.7V~5.5V	2.7V~5.5V	2.7V~5.5V
	Ambient Temp Range	-40 °C~+125 °C	-40 °C~+125 °C	-40 °C~125 °C	-40 °C~125 °C
	GPIO	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V/5.0V	1.8V / 3.3V
	I ² C Level Translator	--	--	--	--
	32.768 Khz Crystal oscillator driver	--	--	--	--
	AMUX	--	--	Yes	No
	Communication	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	Yes	Yes	Yes	Yes, and with Adaptive Voltage Position
	Package (mm)	HWQFN28 (4.5 mm x 4.5 mm x 0.68 mm)	HWQFN28 (4.5 mm x 4.5 mm x 0.68 mm)	FC-QFN32 (5 mm x 5 mm x 0.68 mm)	WF-QFN (3.5 mm x 4.5 mm)

5V PMIC (cont.)

	Features	PF7100	PF4210	PF8100/PF8150	PF8101	PF8121
Power Management Features	Buck	4*(0.4V~1.8V / 2.5 A) multiphase 1*(1V~4.1V / 2.5 A)	1*(0.3V~1.875V / 2.5 A) 1*(0.3V~1.875V / 2 A) 1*(0.4V~3.3V / 3 A) 2*(0.4V~3.3V / 1.5 A) 1*(0.4V~3.3V / 1 A)	6*(0.4V~1.8V / 2.5 A) multiphase 1*(1V~4.1V / 2.5 A)	4*(0.4V~1.8V / 2.5 A) multiphase 2+2 1*(1V~4.1V / 2.5 A)	6*(0.4V~1.8V / 2.5 A) multiphase 2+2 1*(1V~4.1V / 2.5 A)
	Buck-Boost/Boost	--	1*(5V~5.15V / 600 mA)	--	--	--
	LDO	2*(0.8V~5V / 400 mA)	1*(1V~3V / 400µA, always-on) 1*(0.8V~1.55V / 100 mA) 1*(0.8V~1.55V / 250 mA) 2*(1.8V~3.3V / 100 mA) 1*(1.8V~3.3V / 350 mA) 1*(1.8V~3.3V / 200 mA)	4*(1.5V~5V / 400 mA)	3*(1.5V~5V / 400 mA)	4*(1.5V~5V / 400 mA)
	Others	VSNVS1: (1.8V or 3.0V or 3.3V / 10 mA) VSNVS2: (0.8V or 0.9V or 1.8V/10 mA)	Coin-cell charger	VSNVS: (1.8V / 3.0V or 3.3V / 10 mA)	VSNVS: (1.8V or 3.0V or 3.3V / 10 mA)	VSNVS: (1.8V or 3.0V or 3.3V / 10 mA))
	Li-Ion Battery charger+NTC	--	--	--	--	--
Safety Features	Fit for FuSa	Yes	--	Yes	Yes	Yes
	Voltage monitor	UV/OV	UV	UV/OV	UV/OV	UV/OV
	Watchdog	Simple	--	Simple	Simple	Simple
	ABIST/LBIST	ABIST	--	--	--	--
	CRC on Communication	Yes	--	Yes	Yes	Yes
	Safety output	FSOB, PGOOD	--	FSOB, PGOOD	FSOB, PGOOD	FSOB, PGOOD
System Features	Operating Voltage	2.7V~5.5V	2.8V~4.5V	2.7V~5.5V	2.7V~5.5V	2.7V~5.5V
	Ambient Temp Range	-40 °C~105 °C	-40 °C~85 °C/105 °C	-40 °C~125 °C	-40 °C~105 °C/125 °C	-40 °C~85 °C
	GPIO	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V	1.8V / 3.3V
	I ² C Level Translator	--	--	--	--	--
	32.768 Khz Crystal oscillator driver	--	--	--	--	--
	AMUX	Yes	--	Yes	Yes	Yes
	Communication	I ² C	I ² C	I ² C	I ² C	I ² C
	Frequency Spread-spectrum	Yes	--	Yes	Yes	Yes
	Package (mm)	HVQFN48 (7 mm x 7 mm x 0.85 mm)	QFN56 (8 mm x 8 mm x 0.85 mm)	HVQFN56 (8 mm x 8 mm x 0.85 mm)	HVQFN56 (8 mm x 8 mm x 0.85 mm)	HVQFN56 (8 mm x 8 mm x 0.85 mm)

PF8150 to replace PF8100 by Q1 2026

12V-24V-48V PMIC with low power on/off

	Features	FS23	FS24	FS26	VR5510	FS56	FS27 (NPI)	FS04 (NPI)
Power Management Features	VPRE HV Buck	3.3V or 5V / 0.6 A HVBUCK (internal MOS) or 3.3V or 5V / 100 mA or 250 mA HVLDO	1.9V~5V / 0.4 A (internal MOS)	3.7V~6.35V / 1.5 A (internal MOS)	3.3V~5.2V / 10 A (external MOS)	1*(1.8V~8V / 3 A internal MOS) 1*(1.8V~7.2V / 15 A external MOS)	3.2V~6.35V / 1.5 A or 2.5 A	3.3V~5.3V / 20 A (external MOS)
	LV BUCK	--	--	0.8V~3.35V / 0.8 A or 1.65 A	2*(0.4V~1.8V / 2.5 A) up to 5 A in multiphase 1*(1.0V~4.1V / 2.5 A)	--	0.8V~5V / 2.5 A or 3.5 A	2*(1V~1.8V / 2.5 A) 2*(0.4V~1.8V / 2.5 A) 1*(0.6V~1.8V / 70 mA)
	Boost	--	--	HV Boost Controller 8V~18V Front / Back Mode / 1.9 A (external MOS)	Boost Converter 4.5V~6V / 1 A (internal MOS)	--	HV Boost Controller 5V~24V Front / Back mode (external MOS)	Boost Converter 4.5V~5.5V / 1 A (internal MOS)
	LDO	1*(3.3V or 5V / 150 mA) 1*(3.3V or 5V / 100 mA)	1*(3.3V or 5V / 150 mA)	2*(3.3V or 5V / 400 mA)	1*(1.1V~5V / 400 mA) 2*(1.5V~5V / 400 mA)	--	2*(1V~5V / 400 mA)	1*(1V or 4.1V / 400 mA)
	Trackers	--	--	2*(1.2 V or 1.8 V or VREF or LDO2 / 150 mA)	--	--	2*(1.2 V or 1.8V~5V VREF or LDO2 / 150 mA)	--
	Others	4*High Side Drivers 150 mA with cyclic sensing and PWM capability	--	0.75% Vref 3.3 V or 5 V / 30 mA	1*(HV LDO 0.8V or 3.3V / 10 mA)	--	Flyback / SEPIC mode of Vbst 0.75% Vref 1 V~5 V / 80 mA	Buck5 switch mode 150 mA
Safety Features	Fit for FuSa	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Watchdog	Simple	Simple	Simple / Challenger	Simple / Challenger	Simple / Challenger	Simple / Challenger	Simple / Challenger
	MCU Error Mon	Yes	Yes	Yes (incl. PWM)	Yes	Yes	Yes	Yes
	Voltage monitor	Up to 4	Up to 3	Up to 8	Up to 7	Up to 4	Up to 8	Safety ADC up to 8
	BIST / ABIST	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Safety Output	RSTB, FS0B, LIMPO/1/2	LIMPO	FS0b, FS1b, RSTB	FS0b, PGOOD, RSTB	FS0b, PGOOD1, PGOOD2	FS0b / LIMP, FS1b, RSTB	FS0b, PGOOD, RSTB
	CRC on Communication	Yes	Yes(Optional)	Yes	Yes	Yes	Yes	Yes
	IC ext Monitoring	Yes	Yes	Yes	--	Yes	Yes	--

12V-24V-48V PMIC with low power on/off (cont.)

	Features	FS23	FS24	FS26	VR5510	FS56	FS27 (NPI)	FS04 (NPI)
System Features	Max Operating voltage	18V	18V	18V	36V	18V	Boost Front / Back mode: 18V SEPIC Front mode: 32V Flyback Front mode: 52V	36V
	Max input voltage	40V	40V	40V	60V	36V	70V	60V
	Ambient Temp Range	-40 °C~125 °C	-40 °C~115 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C
	Spread-spectrum	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Low-power Off Mode (25°C) All Reg Off	30 µA	35 µA	30 µA	15 µA	7.5 µA	30 µA	12 µA
	Low-power On Mode Vpre ON/ Reg could be switched On	20 µA	40 µA	32 µA	Standby mode with Vpre + HVLDO ON: 35 µA. Deep sleep mode with HVLDO on: 15 µA	74 µA	32 µA	35 µA
	GPIO	2*HVIO, 4*LVIO, 2*Wakeup, 1*INTB	1*HVIO1, 1*LIMP0 / GPO, 2*Wakeup, 1*INTB, 3*HW ID	2*HV GPIO, 2*Wakeup, 1*INTB	2*PWRON, 1*INTB, 1*STBY input	3*GPIO, 2*EN	2*LV IO, 2*GPIO, 2*Wakeup, 1*INTB	2*PWRON, 4*GPIO, 1*INTB, 1*STBY input, 1*STBY_WKUP
	AMUX (battery, I/O, temp, VREF)	Yes	Yes	Yes	Yes	--	Yes	Main ADC
	Long Duration Timer	Yes	Yes	Yes	--	--	Yes	--
	Communication	SPI/I ² C	SPI	SPI	I ² C	I ² C	SPI/I ² C	I ² C
	CAN / LIN interface	1*CAN FD (optional) 1*LIN (optional)	1*CAN FD (optional)	--	--	--	--	--
	Package (mm)	QFN48 (7 mm x 7 mm)	QFN32 (5 mm x 5 mm)	LQFP48 EP (7 mm x 7 mm)	QFN56 (8 mm x 8 mm)	QFN32 (5 mm x 5 mm)	LQFP48 EP (7 mm x 7 mm)	QFN64 (9 mm x 9 mm)
BYLink System Power Platform		--	--	Yes	Yes	Yes	Yes	Yes

12V-24V-48V PMIC with low power off

	Features	FS45/FS65	FS5502	VR5500	FS84/85	FS84QFN48EP	FS86
Power Management Features	VPRE HV Buck	6.5V / 2.0 A Asynchronous (internal MOS)	3.3V-5V / 10 A (external MOS)	3.3V-5V / 10A (external MOS)	3.3V-5V / 10 A (external MOS)	3.3V-5V / 10 A (external MOS)	3.3V-5V / 15 A with HS short-circuit protection (external MOS)
	LV BUCK	FS45 Vcore LDO 1V-5V / 500 mA or FS65 Vcore buck 1V-5V / 0.8 A or 1.5 A or 2.2 A	1*(0.8V-1.8V / 2.5 A) 1*(1V-3.3V / 2.5 A)	2*(0.8V-1.8V / 2.5A) up to 5 A in multiphase 1*(1V-3.3V / 2.5 A)	2*(0.8V-1.8V / 2.5A) up to 5 A in multiphase 1*(1V-3.3V / 2.5 A)	1*(0.8V-1.8V / 2.5 A) 1*(1V-3.3V / 2.5 A)	1*(1V-3.3V / 2.5 A)
	Boost	Buck/Boost Topology on Vpre (external MOS)	--	Boost Converter 5V or 5.74V / 1.1 A (internal MOS)	Boost Converter 5V or 5.74V / 1.1 A (internal MOS)	Boost Converter 5V or 5.74V / 1.1 A (internal MOS)	Boost Converter 5V-6V / 1.1 A (internal MOS)
	LDO	Vcan 5V / 100 mA Vcca 3.3V or 5V / 100 mA or 300 mA	1*(1.1V-5V / 400 mA)	2*(1.1V-5V / 400 mA)	2*(1.1V-5V / 400 mA)	2*(1.1V-5V / 400 mA)	1*(1.5V-5V / 400 mA) 1*(1.1V-5V / 400 mA)
	Trackers	Vaux 3.3V or 5V / 400 mA (ext. PNP)	--	--	--	--	--
	Others	Vkam LDO 3.5V / 3 mA	--	--	--	--	--
Safety Features	Fit for FuSa	Yes	Yes	Yes	Yes	Yes	Yes
	Watchdog	Simple/ Challenger	--	--	Simple/ Challenge	Simple	Simple/ Challenger
	FCCU or MCU Error Mon	Yes	--	--	Yes	Yes	Yes
	Voltage monitor	internal Monitoring	Up to 3	Up to 3	Up to 6	Up to 6	Up to 10
	BIST / ABIST	Yes	--	--	Yes	Yes	Yes
	Safety Output	FS0b and FS1b (option)	PGOOD, RSTB	PGOOD, RSTB	FS0b, PGOOD, RSTB	FS0b, PGOOD, RSTB	FS0b, PGOOD, RSTB
	CRC on Communication	No	Yes	Yes	Yes	Yes	Yes
	IC ext Monitoring	Yes	--	--	Yes	--	Yes

12V-24V-48V PMIC with low power off (cont.)

	Features	FS45/FS65	FS5502	VR5500	FS84/85	FS84QFN48EP	FS86
System Features	Max Operating voltage	19V	36V	36V	36V	36V	36V / 18V
	Max input voltage	40V	40V	40V	60V	40V	60V / 36V
	Ambient Temp Range	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C	-40 °C~125 °C
	Spread-spectrum	--	Yes	Yes	Yes	Yes	Yes
	Low-power Off Mode (25°C) All Reg Off	32 µA	10 µA	10 µA	10 µA	10 µA	10 µA
	Low-power On Mode Vpre ON/ Reg could be switched On	--	--	--	--	--	--
	GPIO	4*Wakeup, 2*input, 1*output, 1*INTB	2*Wakeup, 1*INTB	2*Wakeup, 1*INTB	2*Wakeup, 1*INTB	2*Wakeup, 1*INTB	2*Wakeup, 2*GPIO, 1*INTB
	AMUX (battery, I/O, temp, VREF)	Yes	--	Yes	Yes	Yes	Yes
	Long Duration Timer	Yes	--	--	--	--	--
	Communication	SPI	I ² C	I ² C	SPI/I ² C	SPI	I ² C
	CAN / LIN interface	1*CAN (optional) 1*LIN (optional)	--	--	--	--	--
	Package (mm)	LQFP48 EP (7 mm x 7 mm)	QFN56 (8 mm x 8 mm)	QFN56 (8 mm x 8 mm)	QFN56 (8 mm x 8 mm)	QFN48 (7 mm x 7 mm)	QFN48 (7 mm x 7 mm)
BYLink System Power Platform		--	Yes	Yes	Yes	Yes	Yes

AC-DC power controllers



Part Number/Product Name	Key Features and Benefits
Active Bridge Rectifiers TEA2206T TEA2208T TEA2209T	- Efficiency improvement up to ~1.4 % - Forward conduction losses of the diode rectifier bridge are eliminated - Integrated high voltage level shifters - Direct drive of all rectifier MOSFETs - Very low external part count - Integrated Xcap discharge (2 mA) - Self supply, very low IC power consumption (~2 mW) - TEA2206T : directly drive two rectifier MOSFETs (SO8) - TEA2208T : directly drive four rectifier MOSFETs (SO14) - TEA2209T : directly drive four rectifier MOSFETs, additional comp function to disable Gate at no-load (SO16)
Digital Programmable PFC + LLC Combos TEA2016AAT TEA2017AAT TEA6017AT	- Single SO16 package PFC + LLC combo controller - Parameter programming during application design / development with use of GUI - Excellent no-load input power (< 75 mW) - Improved audible noise through Fixed BM frequency, intelligent soft-start/stop function. - High efficiency across the load range with multimode functions - Accurate independent setting of (low power/ burst) modes - Excellent power factor(PF) and total harmonic distortion(THD) (TEA2017) - TEA2016AAT : DCM/QR mode PFC+LLC - TEA2017AAT : Multimode (DCM/QR/CCM) PFC + LLC - TEA6017AT : Multimode(DCM/QR/CCM) PFC+LLC. Compliant with NXP industrial profile
Digital Programmable Interleaved PFC TEA2376AT TEA2376DT	- Digital configurable interleaved PFC - Programmable phase shedding and burst mode operation - Excellent power factor (PF) and total harmonic distortion (THD) - Valley/zero voltage switching for minimum switching losses - TEA2376AT : SO10 package for interleaved PFC - TEA2376DT : SO14 package for interleaved PFC, I²C communication
Digital Programmable LLC TEA2226AT TEA9026T	- LLC controller in a SO16 package - Integrated high-voltage start-up - High efficiency across the load range with multimode functions - Accurate independent setting of (low power/burst) modes - TEA2226AT: Parameter programming with use of GUI - TEA9026T: Wide input voltage range and low standby(non-PFC)
Synchronous Rectifiers TEA1995T TEA2095T/TE TEA2096T	- Adaptive gate drive for maximum efficiency at high load and low load - Low supply current in no-load - Very wide supply voltage range 2 channel SR for LLC resonant in a SO8 package - Better thermal in HSO8 package in TEA2095TE - Interlock function to prevent simultaneous conduction of the external MOSFETs (TEA2095 and TEA2096) - Drain sensing voltage - TEA1995T : 100V - TEA2095T/TE : 120V - TEA2096T : 200V
Xcap Discharge Controller TEA1708T	- Only ~1mW power consumption - Very robust on surge tests - No HV diodes needed
PFC + Flyback Combo TEA1755(L)T	- High efficiency across the load range - Reduced audible noise - Safe restart and latched protection version