

NOVOSENSE AUTOMOTIVE SOLUTION

Enable the Electrification and Intellectualization of xEV



NOVOSENSE: Highly Robust and Reliable Analog and Mixed Signal IC Design Company



NOVOSENSE Microelectronics (NOVOSENSE, SSE Code 688052) is a highly robust & reliable analog and mixed signal IC design company. Since its establishment in 2013, the company has been focusing on signal sensing, system interconnection and power drive, providing comprehensive semiconductor products and solutions such as sensor, signal chain, isolator, interface, power driver, power management, which are widely used in automotive, industrial control, information communication and consumer electronics markets.

With the mission of "Sense and Drive the Future, Build a Green, Smart and Connected World with Semiconductors", NOVOSENSE is committed to providing chip-level solutions to link the digital world and the real world.



NOVOSENSE AUTOMOTIVE SOLUTION

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NOVOSENSE Automotive Solution Overview

Smart Cockpit/Autonomous Driving

- Large screen rear light driver
- Antenna/camera load protection
- Universal power Buck/LDO
- Voltage monitoring
- Seat air bag MEMS pressure sensor
- High current pre-driver
- Digital relay

Body/Domain Control

- High and low side switch
- e-Fuse
- Magnetic switch position sensor
- Digital relay
- Multichannel half-bridge drive, pre-driver
- BDC/BLDC/stepping motor driver

Automotive Lighting

- Rear light & front light driver
- Ambient lighting driver
- Interior lighting driver
- Stepping motor driver

Fuel/Hybrid: Powertrain

- Engine intake manifold MEMS pressure sensor
- Fuel vapor MEMS pressure sensor
- Crankshaft ventilator MEMS pressure sensor
- Canister desorption MEMS pressure sensor
- Exhaust gas re-circulation MEMS pressure sensor
- GPF/DPF differential pressure MEMS pressure sensor

New Energy Vehicle: Inverter/Powertrain

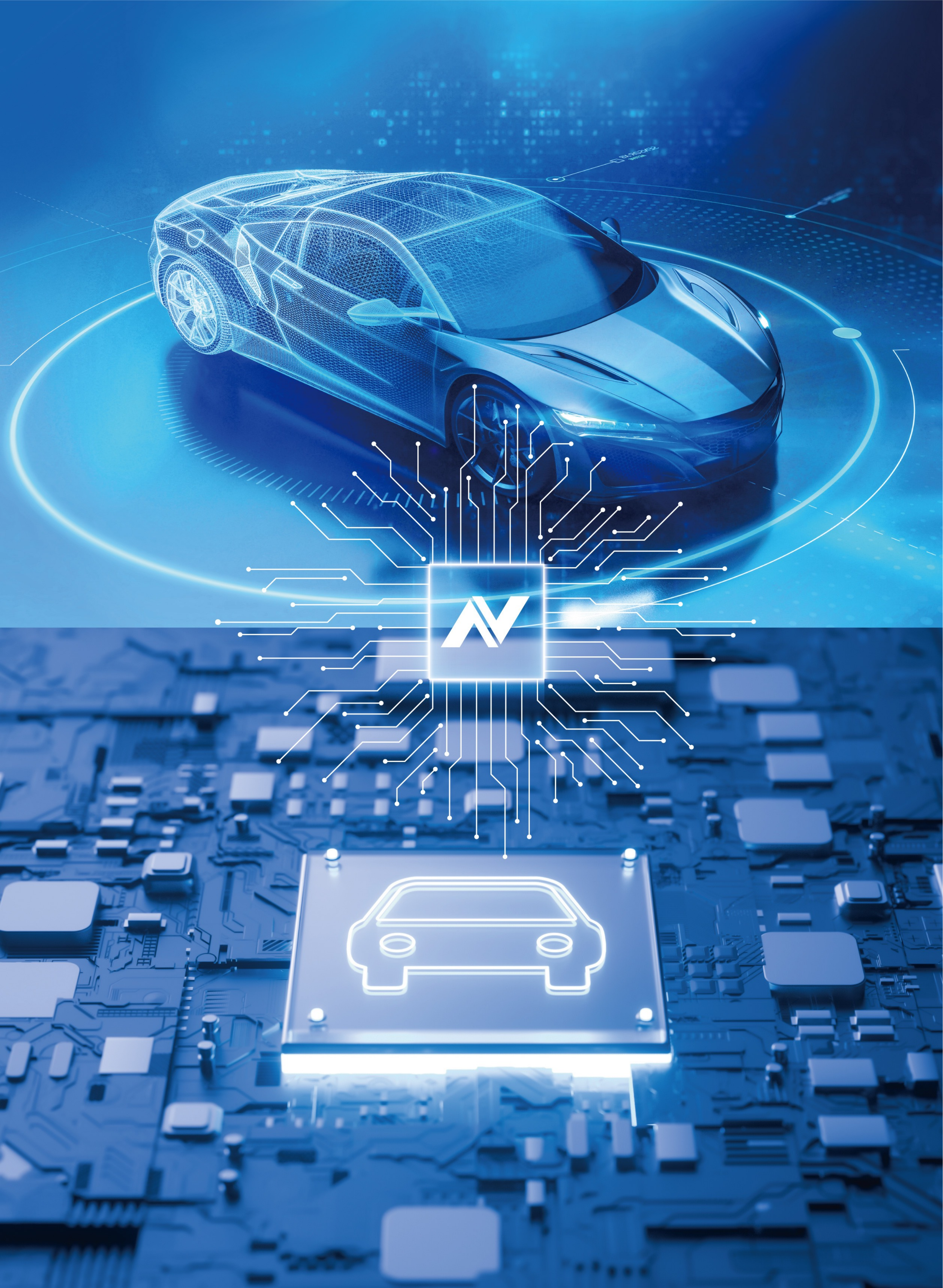
- Smart ISO drive/functional safety driver
- Digital isolator
- CAN/LIN/MiniSBC interface
- Magnetic current sensor
- Rotary transformer drive power amplifier
- Vacuum boost servo MEMS pressure sensor

New Energy Vehicle: BMS

- ISO & non-ISO power drive
- Digital isolator
- CAN/LIN/MiniSBC interface
- ISO digital relay
- ISO current and voltage sampling
- BPS battery pack thermal runaway MEMS pressure sensor

New Energy Vehicle: DCDC/OBC/PDU/Thermal Management

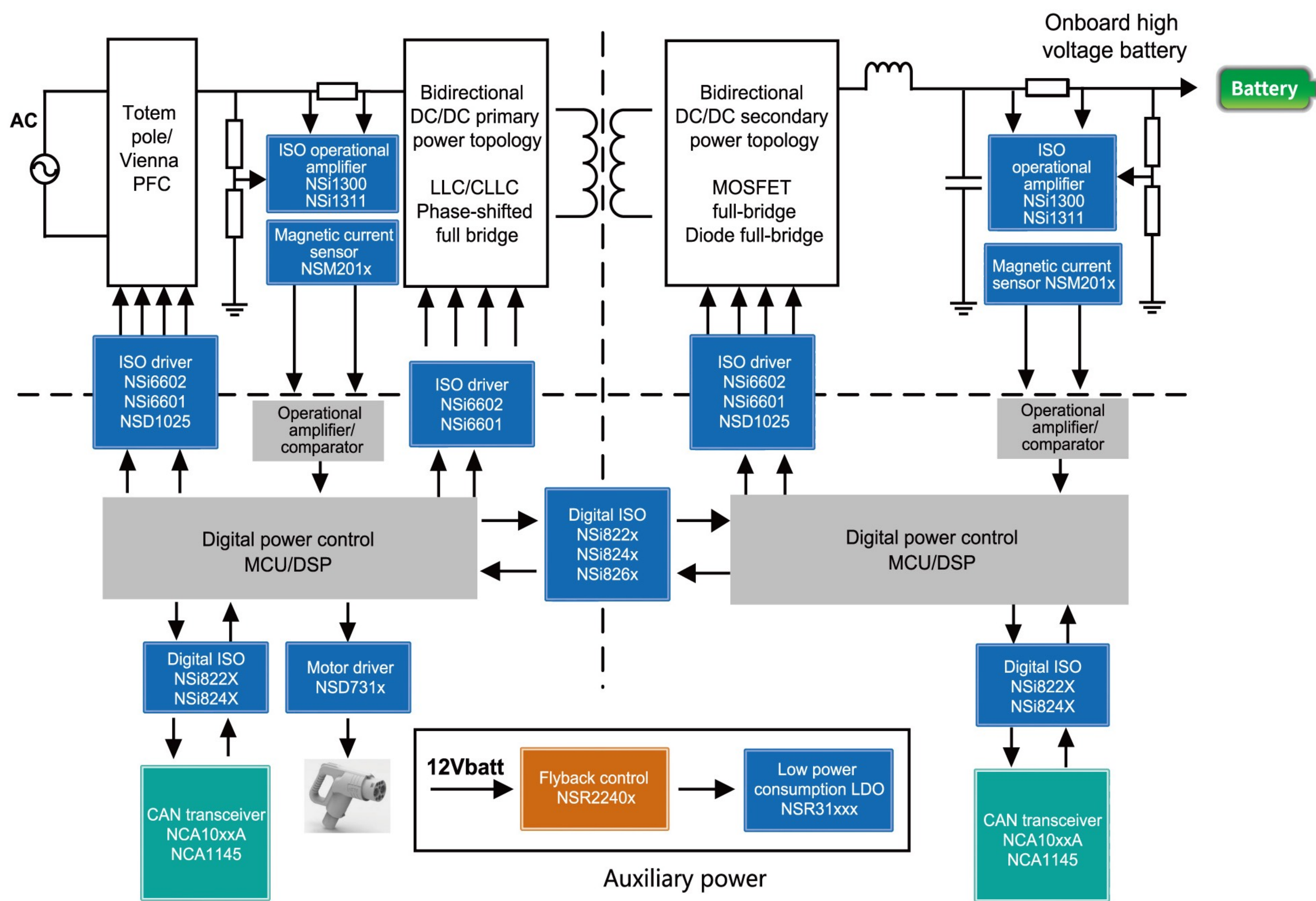
- ISO & non-ISO power drive
- Digital isolator
- ISO current and voltage sampling
- CAN/LIN/MiniSBC interface
- Magnetic current sensor
- Current sense amplifier
- Special motor drive processor for electronic water valve, water pump and fan
- Electronic water valve angle sensor
- Multichannel half-bridge driver, pre-driver
- BDC/BLDC/stepping motor driver



RTMed

Sampling

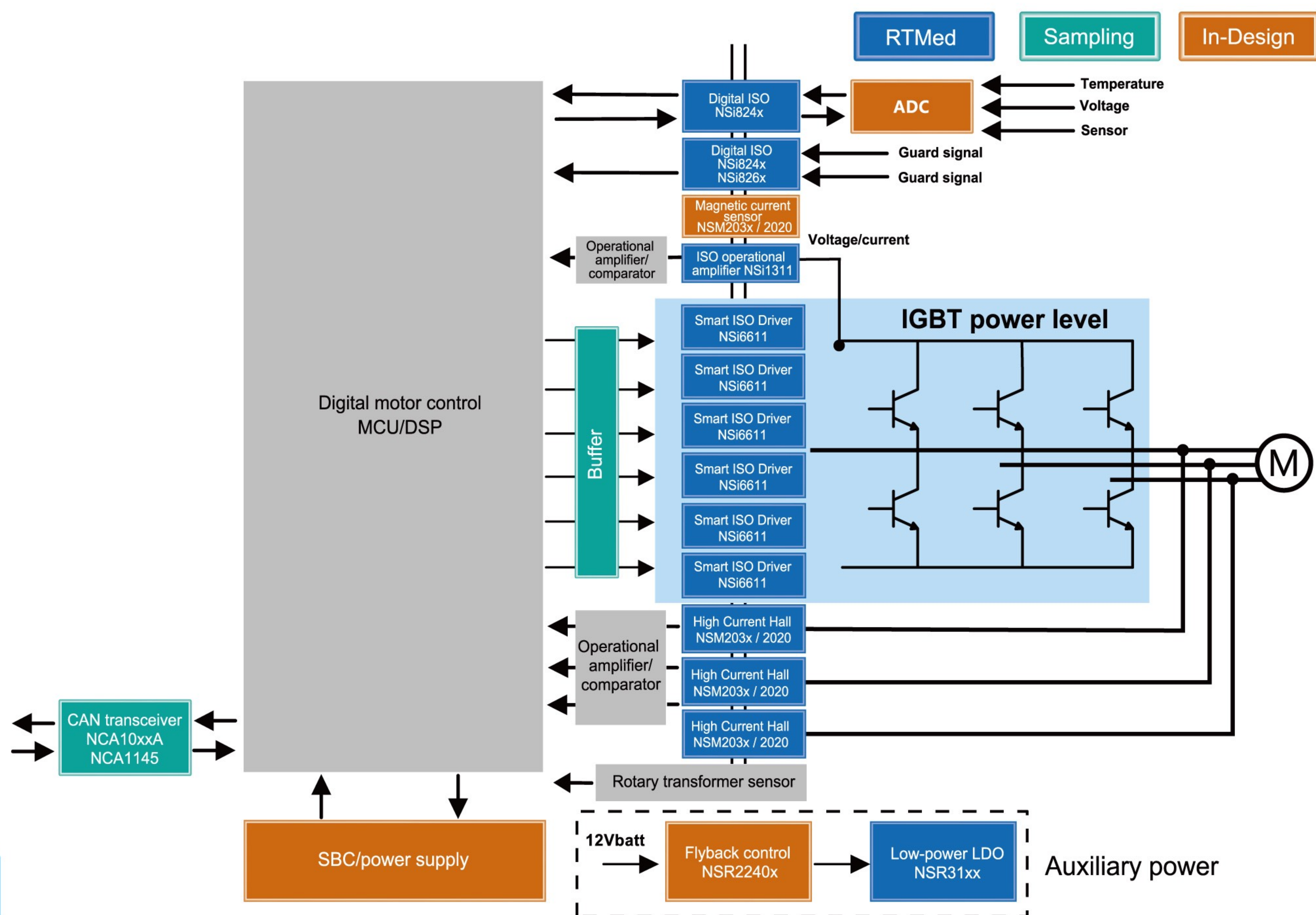
In-Design



Part Number	Product	Application
NSi1300D25/05	+/- 250mV ISO current sampling	PFC/DC-DC current sensing
NSi1311	0.1~2.1V ISO voltage sampling	PFC/DC-DC voltage sensing
NSM2011/NSM2013/NSM2015	Hall current sensor	PFC/DC-DC current sensing
NSi6602/6622	4A ISO half-bridge drive	MOS/IGBT/SiC driver
NSi82xx	Channel ISO	UART/SPI/CAN ISO communication
NSD7312	Brushed DC motor drive	Electronic lock
NSR31xxx	Low power consumption LDO	Low-voltage domain power supply
NSR2240x	Auxiliary power flyback control	Auxiliary power supply
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network
NCA1043	Frame-awaken Automotive CAN FD transceiver	CAN communication network
NCA1145	Local-awaken Automotive CAN FD transceiver	CAN communication network

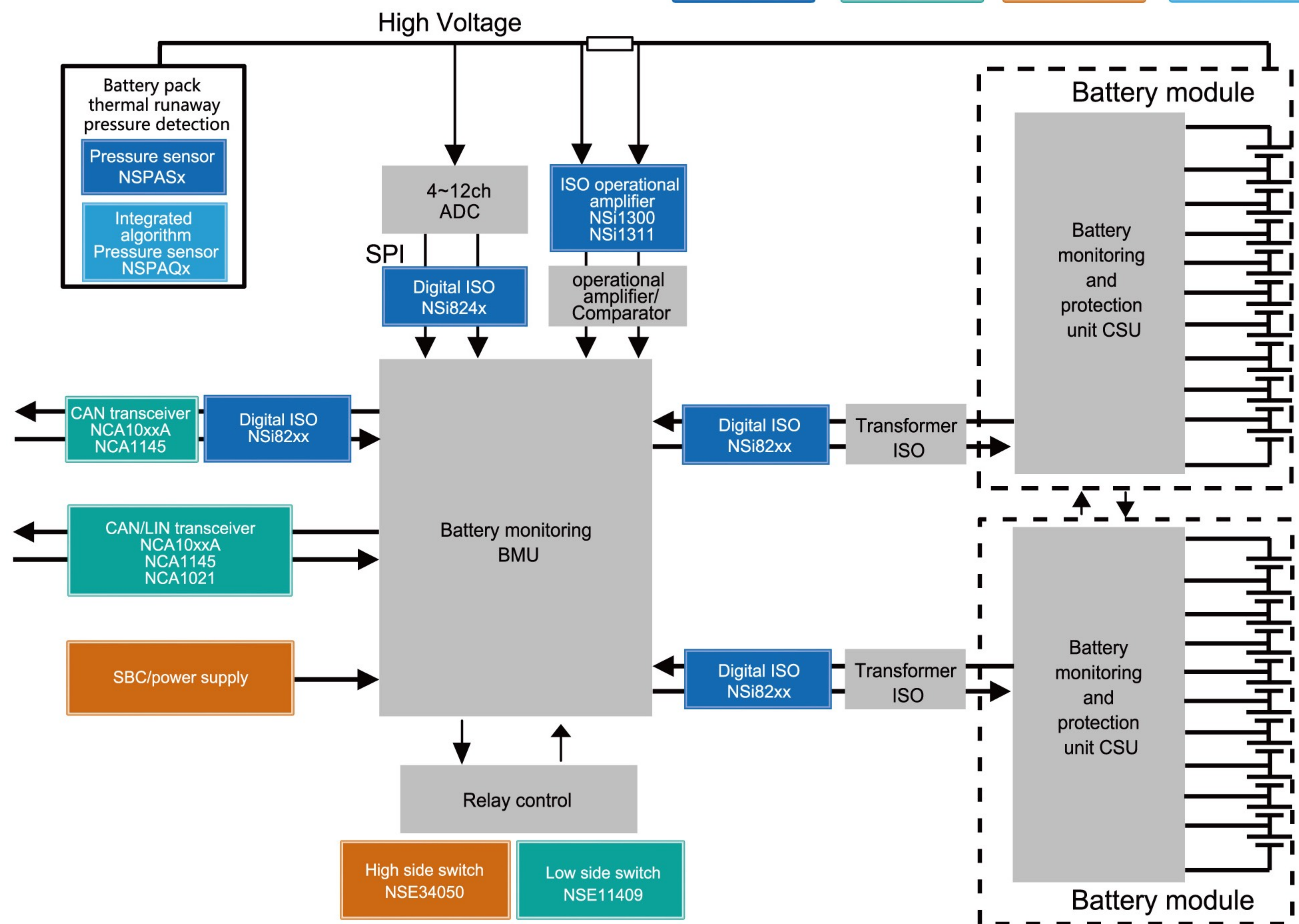
Main Inverter Solution

NOVOSENSE
ROBUST & RELIABLE



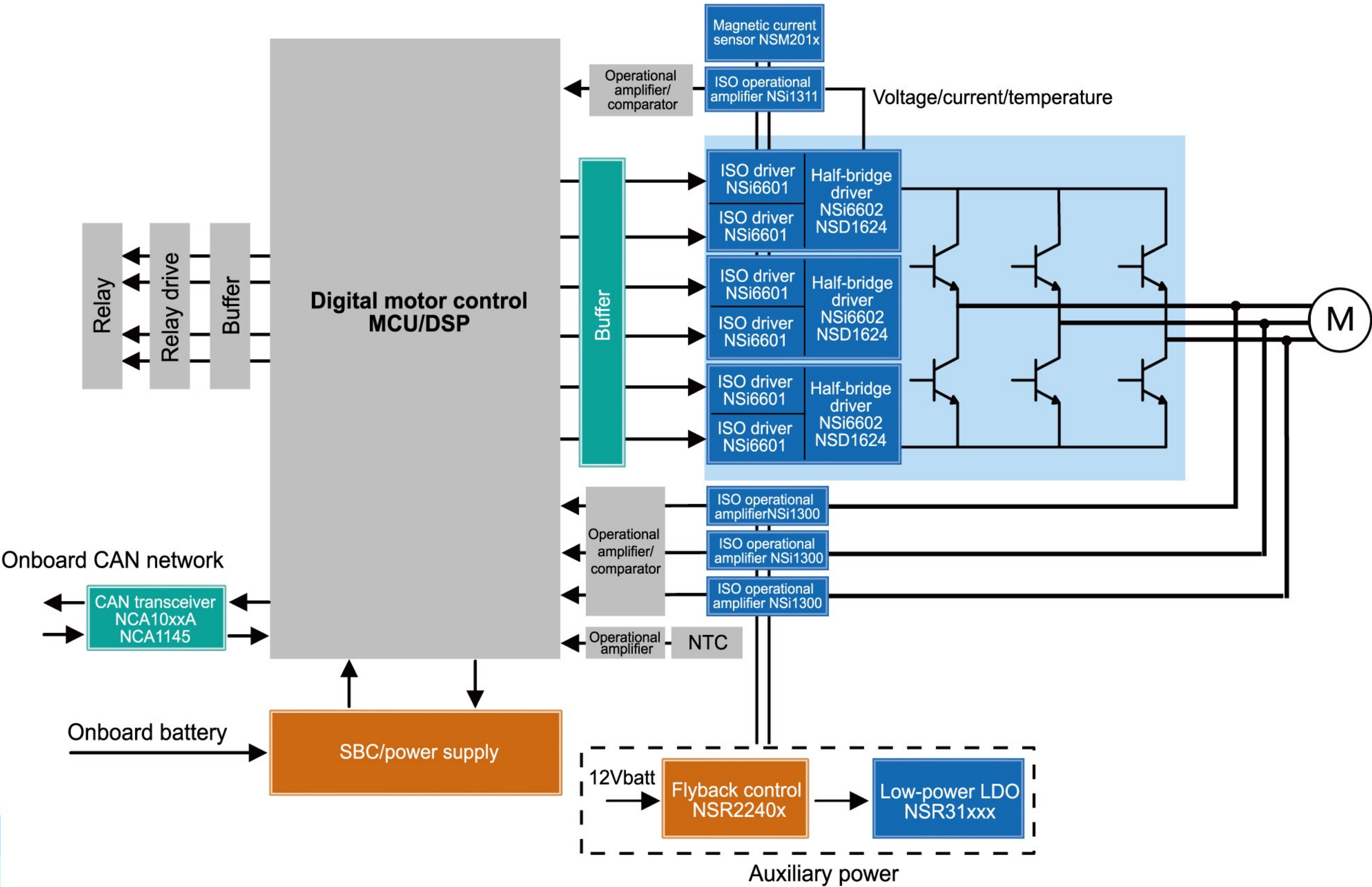
Part Number	Product	Application
NSi1300D25/05	+/- 250mV ISO current sampling	Motor bus/phase current sampling
NSM203x	Hall current sensor	Motor bus/phase current sampling
NSM2020	Coreless Hall current sensor	Motor bus/phase current sampling
NSi6602/6622	4A ISO half-bridge driver	Main power valve driver
NSi6611	Single valve Smart ISO driver	Main power valve driver
NSi82xx	Channel ISO	UART/SPI/CAN ISO communication
NSR31xxx	Low-power LDO	Low-voltage domain power supply
NSR2240x	Auxiliary power flyback control	Auxiliary power supply
NSi1311	0.1~2.1V ISO voltage sampling	Bus voltage sampling
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network
NCA1043	Frame-awaken Automotive CAN FD transceiver	CAN communication network
NCA1145	Local-awaken Automotive CAN FD transceiver	CAN communication network
NCA8T245	Buffer	PWM buffer, level switch

RTMed Sampling In-Design Concept



Part Number	Product	Application
NSi1300D25/05	+/- 250mV ISO current sampling	PFC/DC-DC current sensing
NSi1311	0.1~2.1V ISO voltage sampling	Bus voltage sampling
NSi82xx	Channel ISO	UART/SPI/CAN ISO communication
NSE34050	High side switch	Relay control
NSE11409	Low side switch	Relay control
NCA1021	Automotive LIN bus transceiver	LIN communication network
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network
NCA1043	Frame-awaken Automotive CAN FD transceiver	CAN communication network
NCA1145	Local-awaken Automotive CAN FD transceiver	CAN communication network
NSPASx	MEMS absolute pressure sensor	Battery pack

RTMed Sampling In-Design

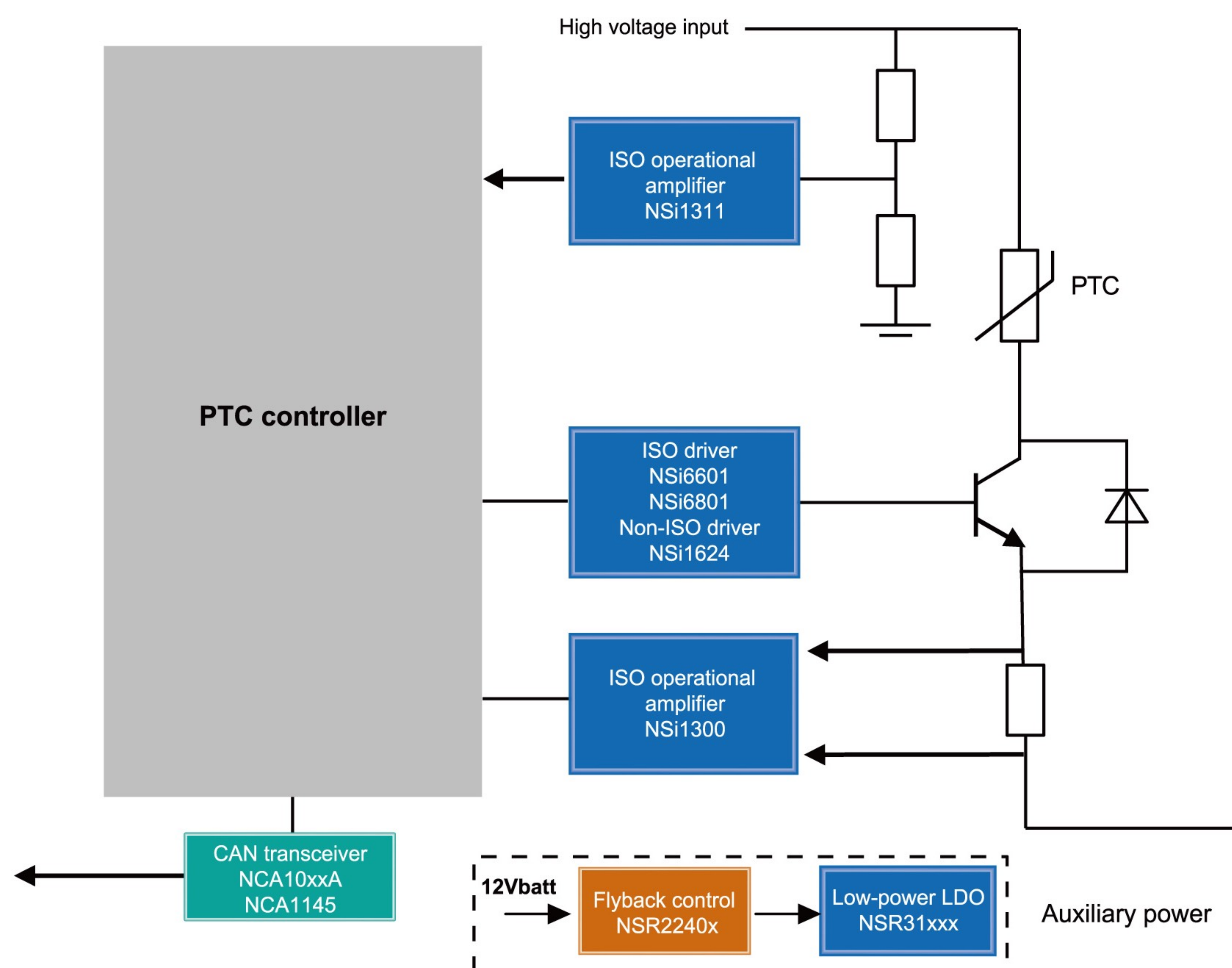


Part Number	Product	Application
NSi1300D25/05	+/- 250mV ISO current sampling	PFC/DC-DC current sensing
NSM2011/NSM2013/NSM2015	Hall current sensor	Motor bus current Phase current detection
NSi1311	0.1~2.1V ISO voltage sampling	Bus voltage sampling
NSi82xx	Channel ISO	UART/SPI/CAN ISO communication
NSR31xxx	Low power consumption LDO	Low-voltage domain power supply
NSR2240x	Auxiliary power flyback control	Auxiliary power supply
NSi6601	Single valve ISO driver	Power valve driver
NSD1624	Non-ISO half-bridge driver	Power valve driver
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network
NCA1043	Frame-awaken Automotive CAN FD transceiver	CAN communication network
NCA1145	Local-awaken Automotive CAN FD transceiver	CAN communication network
NCA8T245	Buffer	PWM buffer, level switch

RTMed

Sampling

In-Design



Part Number	Product	Application
NSi1300D25/05	+/- 250mV ISO current sampling	PFC/DC-DC current sensing
NSi1311	0.1~2.1V ISO voltage sampling	Bus voltage sampling
NSi82xx	Channel ISO	UART/SPI/CAN ISO communication
NSR31xxx	Low-power LDO	Low-voltage domain power supply
NSR2240x	Auxiliary power flyback control	Auxiliary power supply
NSi6601	Single valve ISO driver	Power valve driver
NSi1624	Non-ISO half-bridge driver	Power valve driver
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network
NCA1043	Frame-awaken Automotive CAN FD transceiver	CAN communication network
NCA1145	Local-awaken Automotive CAN FD transceiver	CAN communication network
NSM2011/13/15	Hall current sensor	PTC current detection

Automotive Thermal Management System Solution



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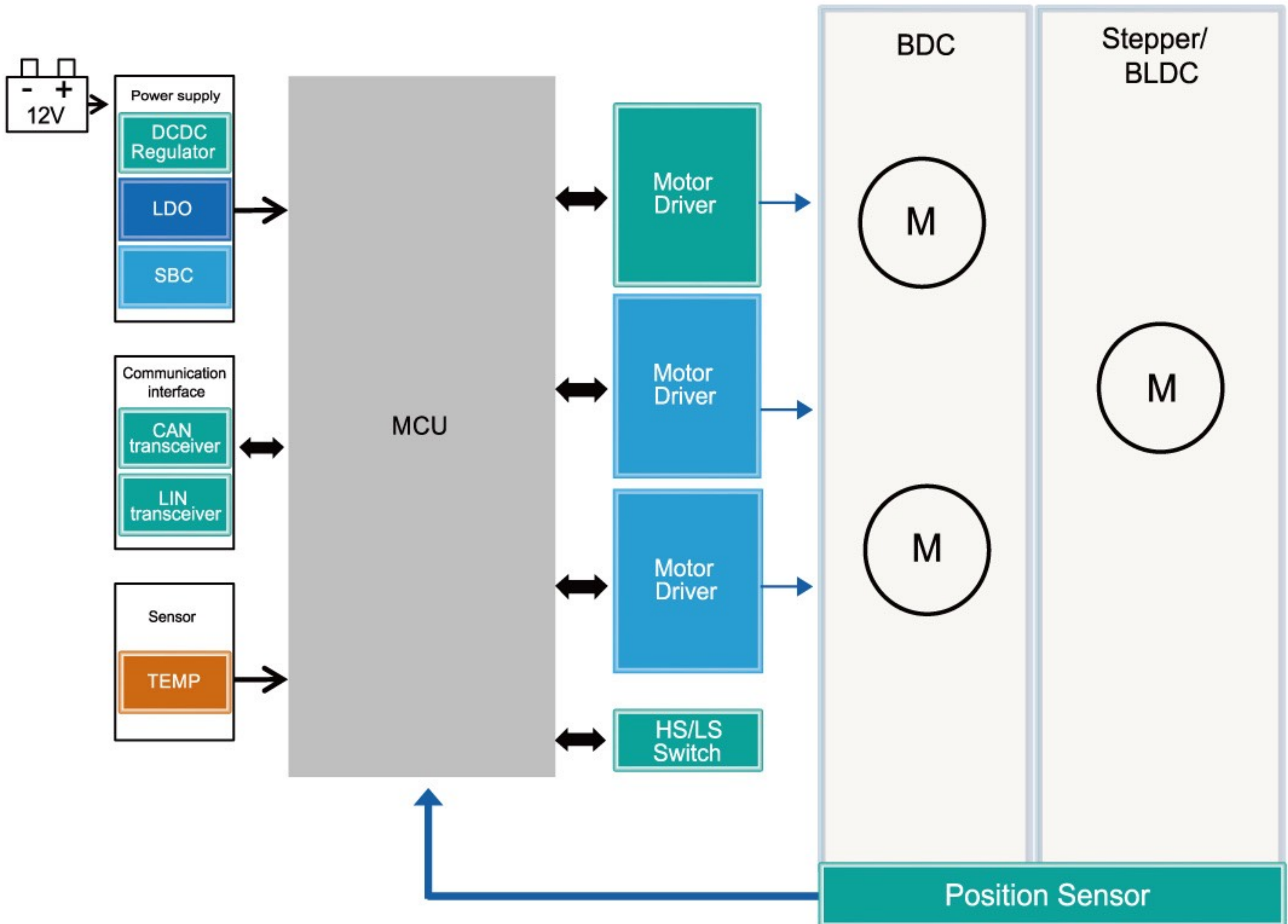
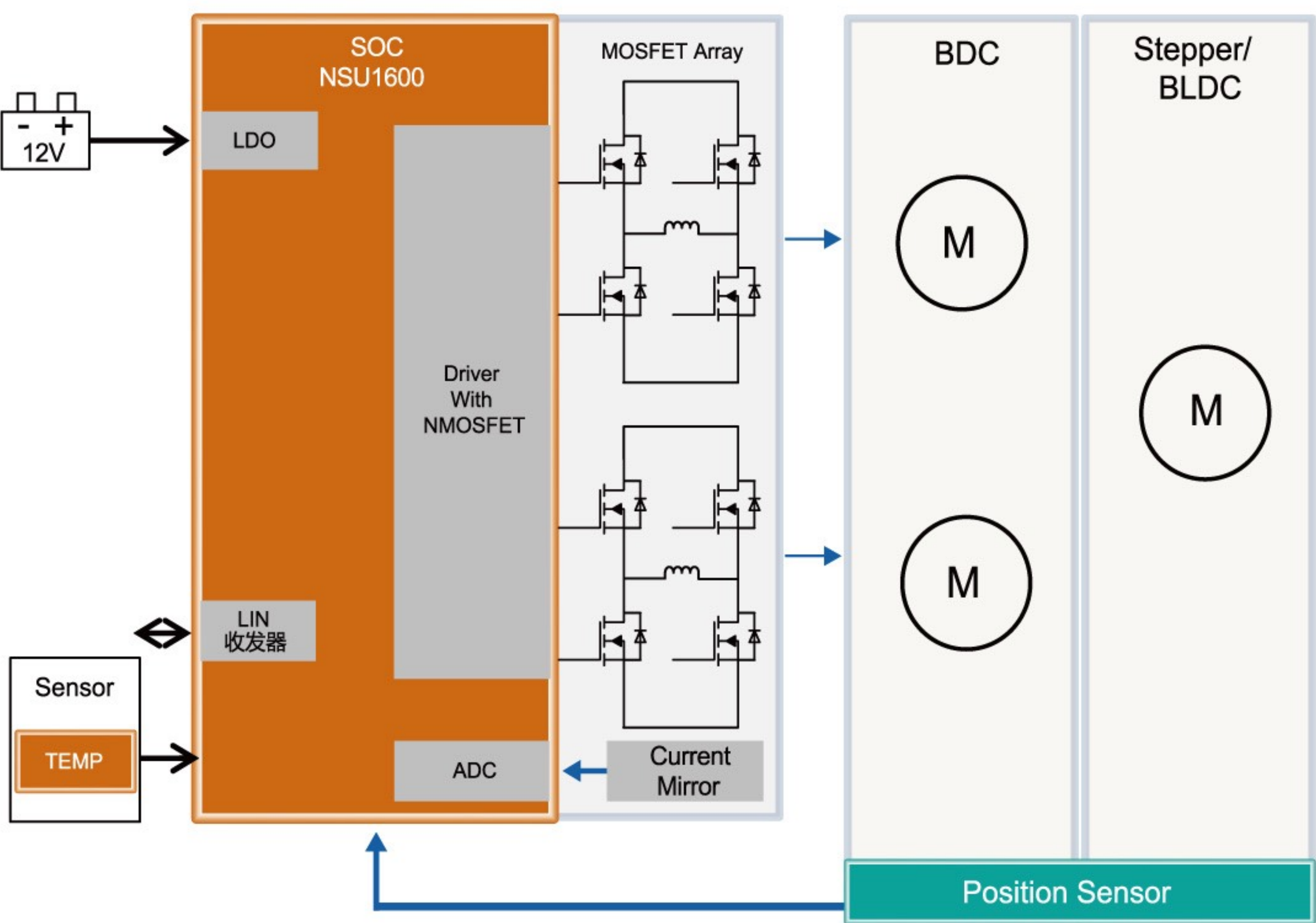
Sampling

In-Design

Concept

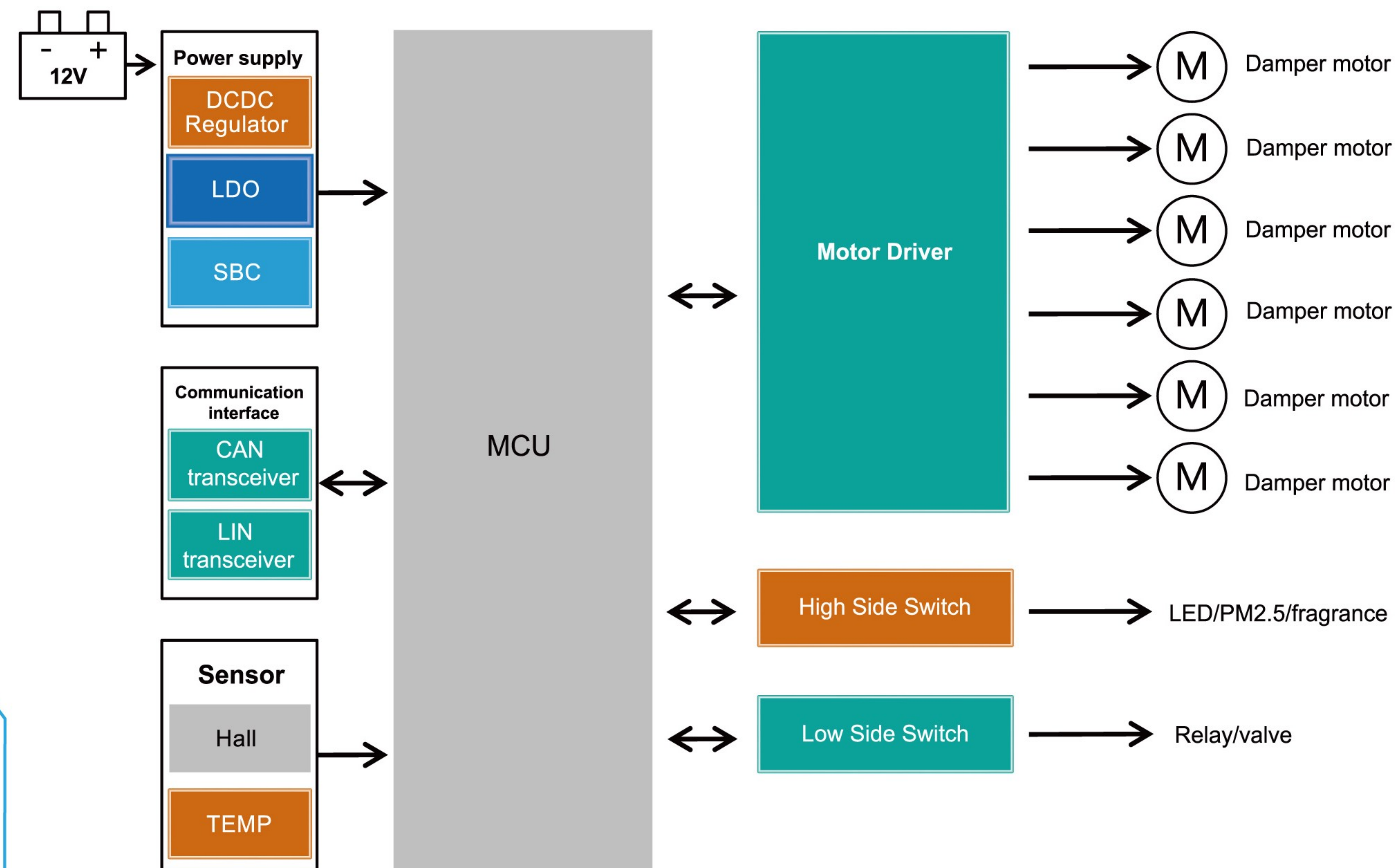
Distributed Soc Solutions

Centralized solutions



Part Number	Product	Application
NCA1021-Q1	Support INH awaken LIN transceiver	Automotive
NCA1042-Q1	Support CANFD transceiver	Automotive
NCA1043-Q1	Support INH awaken CANFD transceiver	Automotive
NSD8308-Q1	40V 8 channel half-bridge driver	Domain Controller, A/C Controller
NSUC1600	Integrated LIN and Power MOSFET array, Automotive motor controller processor with 12V battery directed powered for 20W below BDC/BLDC/Step Motor	TMS Electrical valve
NSUC1602	Integrated LIN and MOS pre-driver, automotive motor controller processor with 12V battery directed powered for 1500W below BDC and BLDC Motor	TMS Electrical pump
NSR35/33/31XXX-Q1	500MA/300MA/150MA 40-V, LOW IQ	Automotive
NSR114XX-Q1	40V .6A/1.5A/2.5A/3.5A/5A/6A low power consumption/low EMI/synchronous buck DC-DC	Automotive
NSE11409-Q1	40V 90mohm single channel low-side drive	Relay/Solenoid valve/Load switch
NSE34050S/D/Q-Q1	40V 50mohm single/dual/four channel high-side drive	Relay/Solenoid valve/Load switch
NSM3011/12	Hall based angular sensor	TMS Electrical valve
NSM101X	Hall Switch/Latch with fixed sensitivity or user programmable	TMS Electrical valve and pump

RTMed Sampling In-Design Concept



Part Number	Product	Application
NCA1021-Q1	Support INH to wake up LIN transceiver	Universal for Automotive
NCA1042-Q1	Support CANFD transceiver	Universal for Automotive
NCA1043-Q1	Support INH to wake up CANFD transceiver	Universal for Automotive
NSD8308-Q1	40V 8-channel half-bridge driver	Domain control, A/C control
NSR35/33/31XXX-Q1	40V 500MA/300MA/150MA 40-V, Low quiescent current LDO	Universal for Automotive
NSR114XX-Q1	40V .6A/1.5A/2.5A/3.5A/5A/6A low-power/ low EMI Synchronous Buck DC-DC	Universal for Automotive
NSE11409-Q1	40V 90mohm single-channel low side driver	Relay/solenoid valve/load switch
NSE34050S/D/Q-Q1	40V 50mohm single/dual/four-channel high side driver	Relay/solenoid valve/load switch

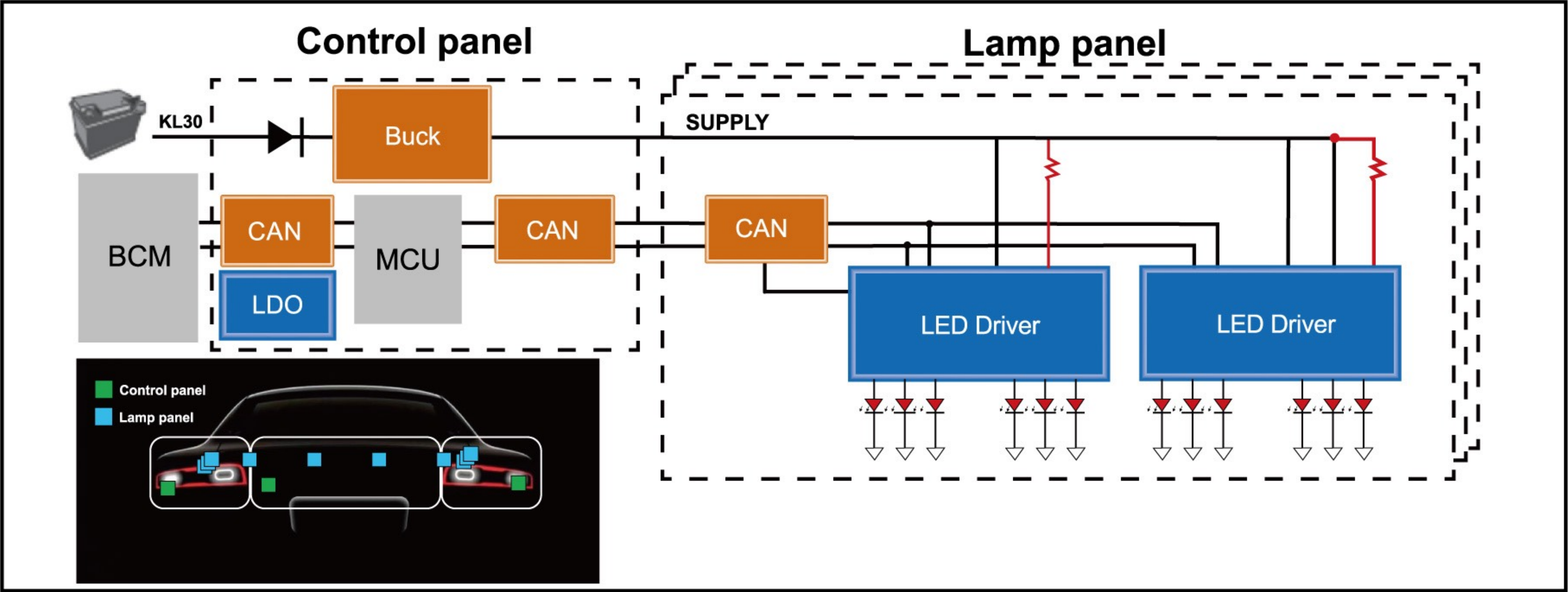
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Sampling

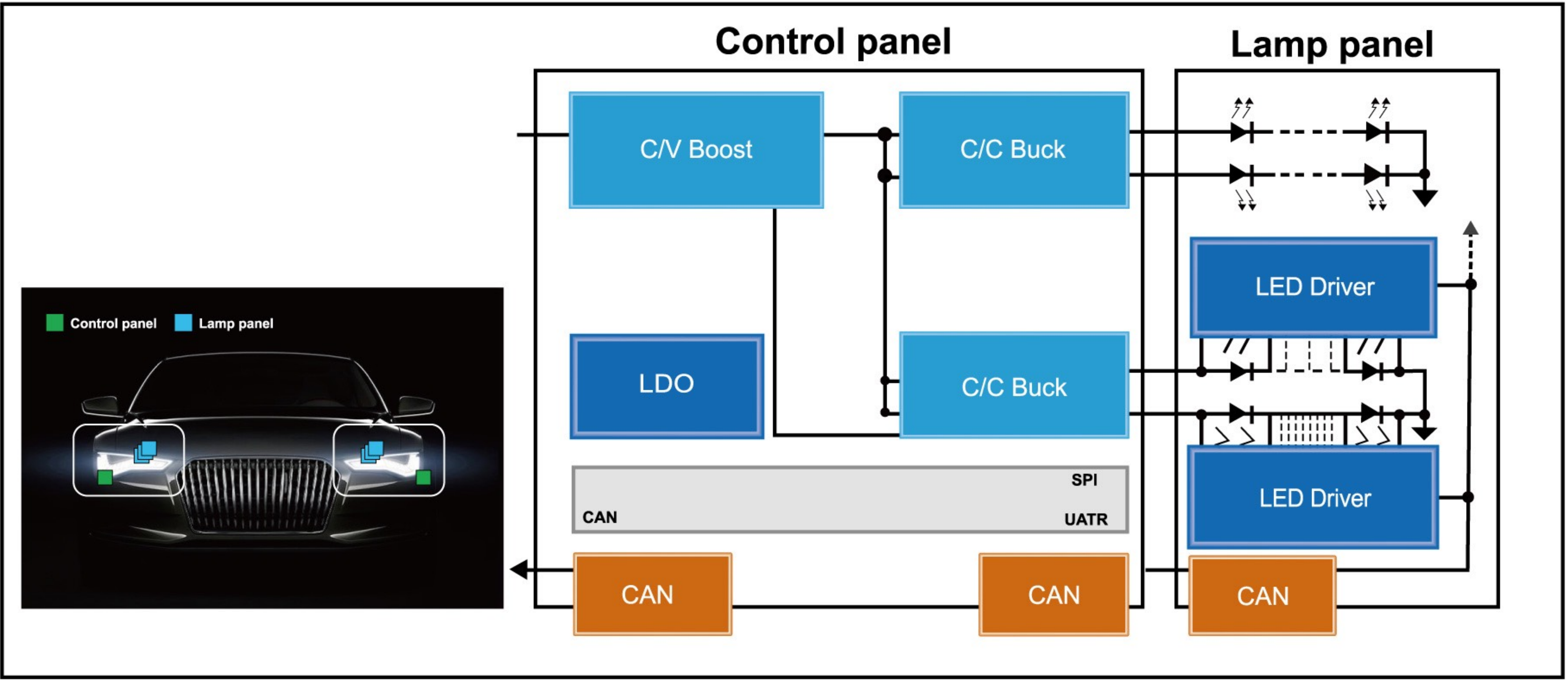
In-Design

Concept

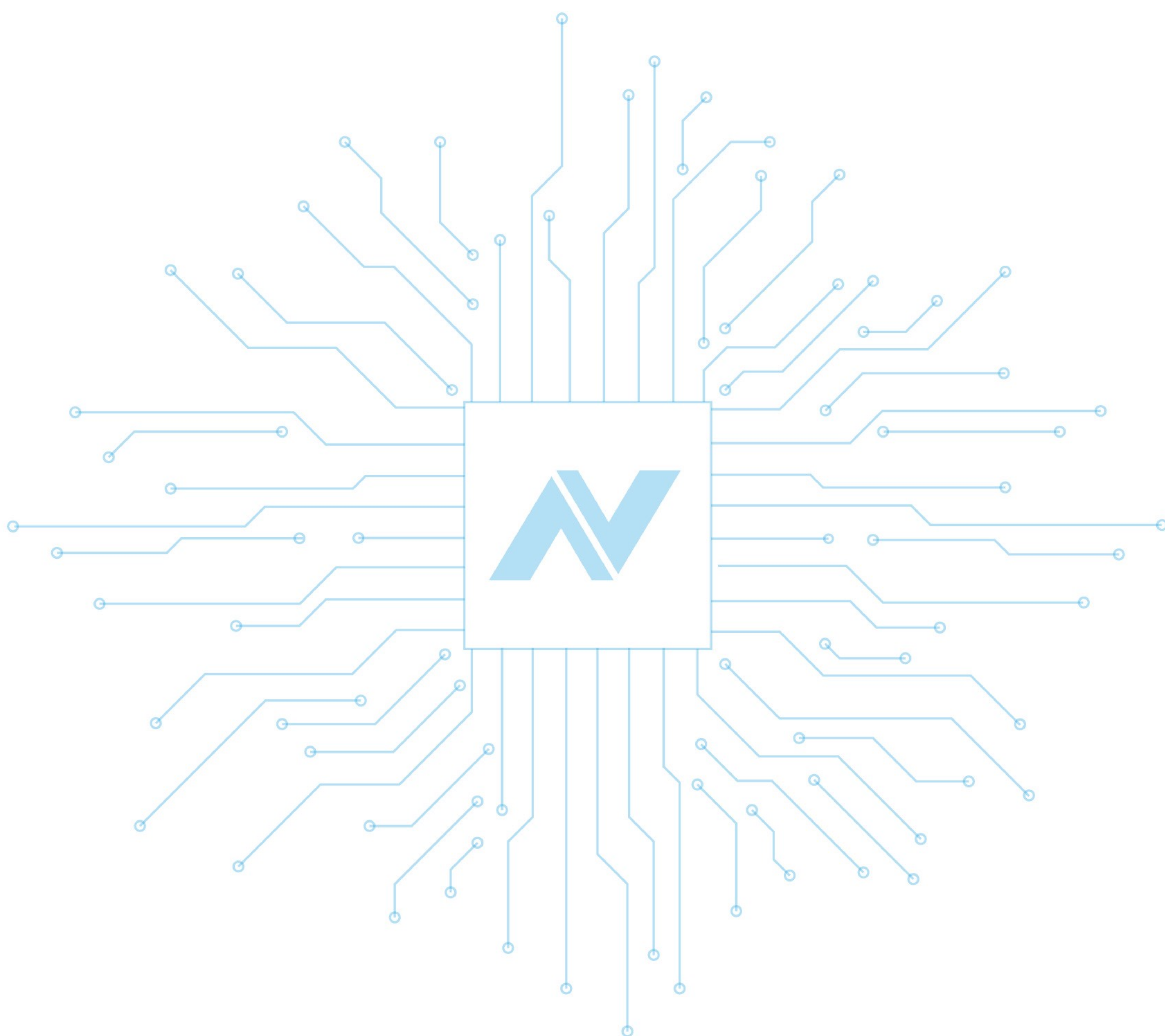
Rear light block diagram:



Front light block diagram:



Part Number	Product	Application
NSL2161x	1CH linear LED driver	Rear light driver, width light driver
NSL2163x	3CH linear LED driver	Rear light driver, width light driver
NSL2363x	3CH linear LED driver	Rear light driver, width light driver
NSL219xx	12CH/16CH/24CH through rear light LED driver	Through rear light
NSR31/3/5xxx	40V low-power LDO	MCU power supply
NCA1042A	Automotive CAN FD transceiver	CAN communication network
NCA1051A	Automotive CAN FD transceiver	CAN communication network





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Date : December 2022



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