

# N4

# Network Controller

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The N4 Network Controller is a high-performance ECU with advanced networking capabilities (8x Ethernet, 12x CAN (FD) and 2x LIN). Designed to play a central role in modern automotive E/E architectures, this product paves the way for software-defined vehicles.

Equipped with the high-end NXP S32G network processor, the N4 is well suited to act as a Central and Secure Gateway, with the option to integrate additional vehicle control and connectivity applications. A dedicated Ethernet TSN switch enables low-latency network communication.

The N4 provides all the necessary conditions to ensure cybersecurity according to ISO 21434 and can implement safety functions up to ASIL B according to ISO 26262.

## FEATURES

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- NXP S32G274 vehicle network processor:
  - 4x Arm Cortex-A53
  - 3x Arm Cortex-M7
- LPDDR4 2GB
- eMMC 8GB
- NOR flash 32MB
- NXP SJA1110 TSN Ethernet switch
- NXP VR5510 power supply with integrated watchdog and voltage monitors



## INTERFACES

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- 1x 1000BASE-T1, wake-up capable according to TC10
- 6x 100BASE-T1, wake-up capable according to TC10
- 1x 100BASE-TX, service interface
- 12x CAN/CAN-FD, wake-up capable
- 2x LIN

## STARTER KIT CONTENTS (ON REQUEST)

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- N4 prototype
- Software and hardware user manual
- Linux board support packages (Reference software and a demo app will be provided)
- CAN FD - USB converter
- UART - USB cable
- Wiring harness for power supply, LIN, CAN & Ethernet (100BASE-T1 & 100BASE-TX) interfaces
- All packed in a hard-shell case

## TYPICAL USE CASES

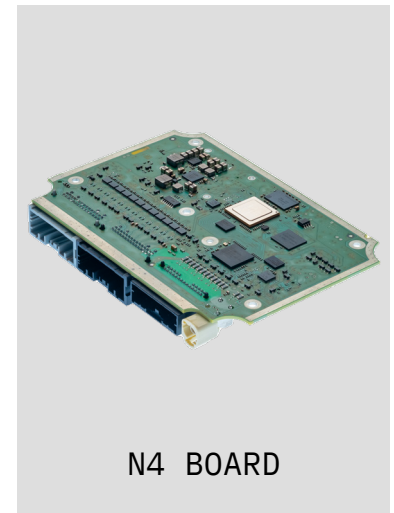
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- Secure Gateway
- Firmware-Over-The-Air (FOTA) update master
- Domain controller
- Central and Zonal computing

# DEVICE SPECIFICATIONS

PARAMETER		UNIT
ECU DIMENSIONS	182.0 x 137.0 x 27.3	mm
WEIGHT	350 +/- 10	g
OPERATING TEMPERATURE	-40 to +85	°C
SUPPLY VOLTAGE	6 to 16	V
MAXIMUM STANDBY CURRENT	<1	mA
MAXIMUM TOTAL LOAD CURRENT	3	A
MAXIMUM INSTANTANEOUS POWER DRAIN	3A @ 6V	
INGRESS PROTECTION RATING	IP5K2	
<b>STANDARDS</b>		
FUNCTIONAL SAFETY	Up to ISO 26262 ASIL B	
E-MARK	ECE-R10 Rev.6	
EMC AND ELECTRICAL	ISO 11452-1, ISO 11452-2, ISO 11452-4 CISPR-25 ISO 7637-1, ISO 7637-2, ISO 7637-3, ISO 16750-1, ISO 16750-2	
ESD	ISO 10605	
INGRESS PROTECTION	ISO 20653	
CLIMATIC	IEC 60068-2-38	
MECHANICAL	ISO 16750-3 IEC 60068-2-64 IEC 60068-2-27	
SALT FOG	IEC 60068-2-11	
CHEMICAL	ISO 16750-5	
ETHERNET COMPLIANCE	Open Alliance TC8	
TSN/AVB	IEEE 802.1AS-2020, 802.1Qav, 802.1Qci, 802.1Qbv	

All interfaces are protected against short circuits to GND and BAT+. Details of these standards can be requested.

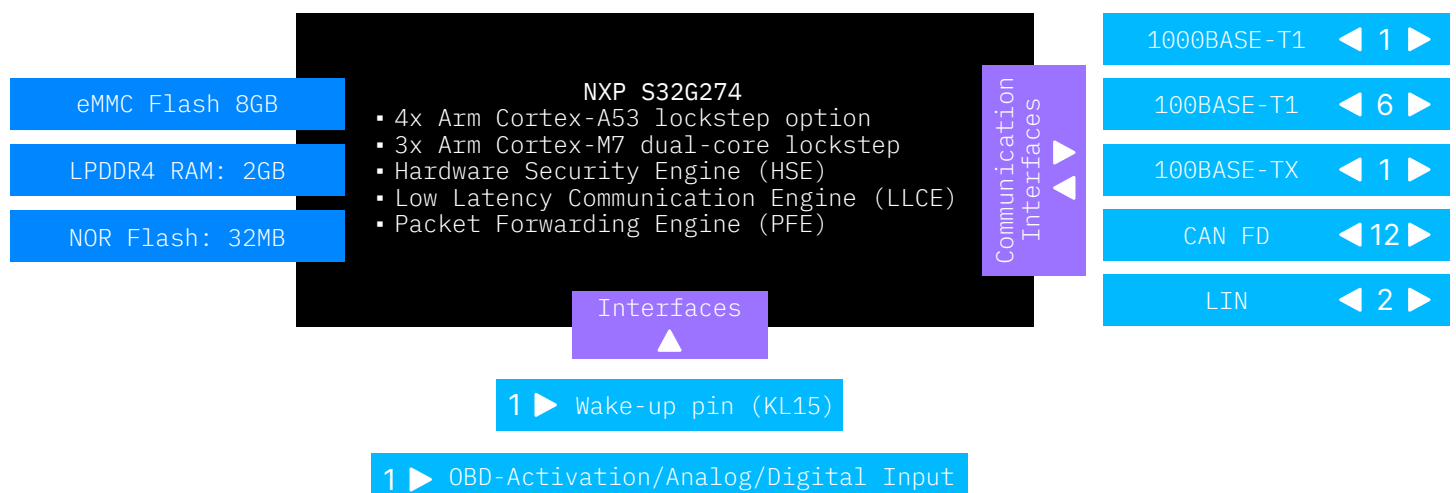


N4 BOARD



N4 STARTER KIT

# BLOCK DIAGRAM



# UNIT HOUSING WITH DIMENSIONS (NOT TO SCALE)

