



BRIGHTLANE™ 88Q5152 secure managed switch

9-port automotive Ethernet switch with integrated 1000BASE-T1 PHYs and MACsec

BRIGHTLANE™ third generation secure automotive Ethernet switch, 88Q5152, is a 9-port switch with integrated 1000BASE-T1, 100BASE-T1, and 10BASE-T1S PHYs fully compliant to the applicable IEEE 802.3 standards.

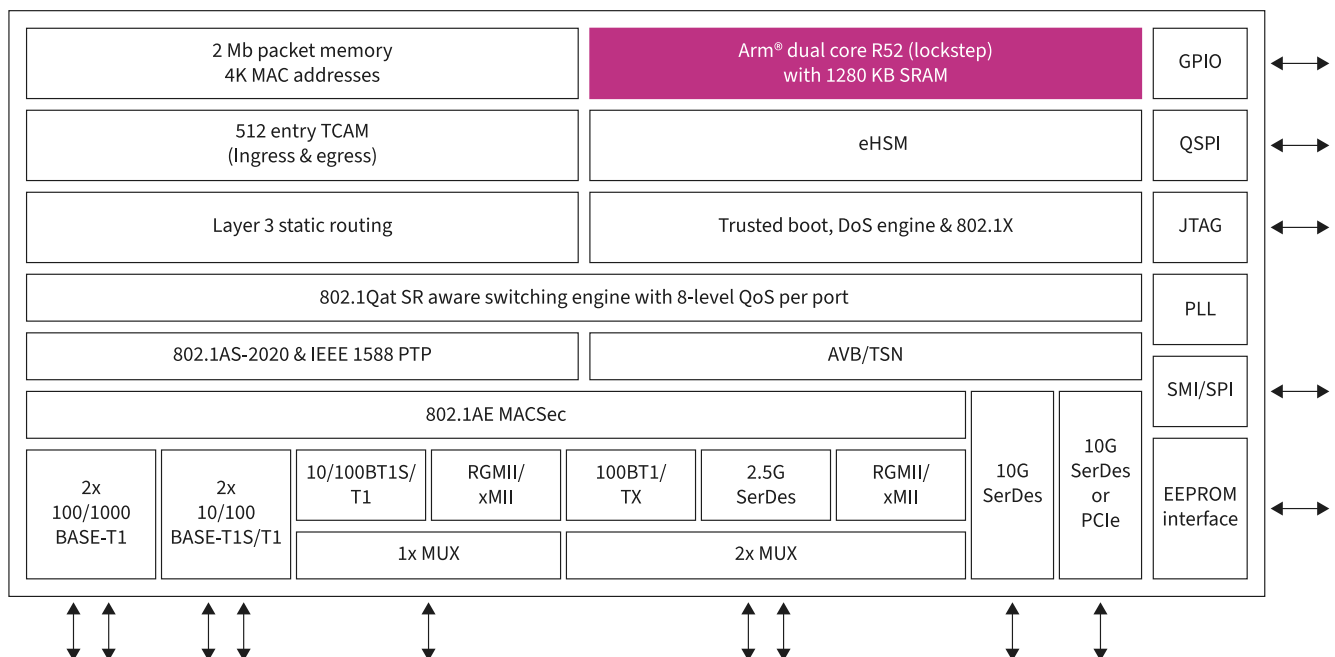
The 9-port switch offers 6 integrated PHYs, 2x supporting dual speed 1000/100BASE-T1, 3x supporting dual speed 100/10BASE-T1(S), and 1x supporting 100BASE-T1/TX. Additional interfaces supported include 2x multi-speed 10 Gb SerDes (10G/5G/2.5G/1 Gbps), 1x multi-speed 2.5 Gb SerDes (2.5G/1 Gbps), 2x RGMII/MII/RMII, and 1x PCIe Gen3 x1 interface.

The port interface options offer flexible configurations for connectivity to external devices, such as 2.5/5/10GBASE-T1 PHYs, or uplinks to host SoCs. This makes the device ideal for In Vehicle Networking (IVN) applications, such as Advanced Driver Assist Systems (ADAS), zonal control modules, and central gateways.

This switch includes a high-performance dual core Arm® R52 CPU that operates in lockstep, with dedicated on-chip memory to support Time Sensitive Networking (TSN) protocols such as Precision Time Protocol (PTP) and security firewall to protect from external malicious attacks.

The switch includes many advanced security features including 802.1AE MACsec to provide link security to prevent man-in-the-middle attacks, Denial of Service (DoS) engine, TCAM for Deep Packet Inspection (DPI), and trusted boot functionality to secure the vehicle network. It also includes an embedded hardware security module to enhance device security by supporting secure and encrypted boot and managing advanced security features such as MACsec.

Block diagram



PRODUCT BRIEF

Key features

Features	Benefits
Processor	– Integrated dual core Arm® R52 CPU operating in lockstep
Security	– 802.1AE MACsec – Embedded Hardware Security Module (eHSM) – Secure boot and encrypted boot support
Switch port interfaces	– 2x 1000BASE-T1/100BASE-T1 PHYs – 3x 100BASE-T1/10BASE-T1S PHYs – 1x 100BASE-T1/100BASE-TX PHY – 2x RGMII/MII/RMII – 1x multi-speed SerDes (2.5G/1 Gbps) – 2x multi-speed SerDes (10G/5G/2.5G/1 Gbps) – 1x PCIe Gen 3 x1 supporting Single Root I/O Virtualization (SR-IOV)
I/O interfaces	– Configurable GPIO – JTAG interface for debugging – SMI/SPI interface for configuration – QSPI with configurable frequencies (19.2–83.3 MHz)
Time Sensitive Networking (TSN) support	– 802.1AS-2020 – 802.1Qat / Qav / Qbu / Qbv / Qci / Qcr – 802.1CB
Automotive qualified	– AEC-Q100 – Automotive grade 2 (-40 to +105°C)
Package characteristics	– 15 mm x 15 mm, 288 pin TFBGA, 0.8 mm pitch

Target applications

- Zonal control module
- Central gateway
- In-vehicle infotainment
- Advanced Driver Assistance Systems (ADAS)
- Body domain controller

Published by

Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

© 2025 Infineon Technologies AG
All rights reserved.

Public

Date: 08/2025

Important notice

Products are sold or provided and delivered by Infineon Technologies AG and its affiliates (“Infineon”) subject to the terms and conditions of the frame supply contract or other written agreement(s) executed by a customer and Infineon or, in the absence of the foregoing, the applicable Sales Conditions of Infineon. General terms and conditions of a customer or deviations from applicable Sales Conditions of Infineon shall only be binding for Infineon if and to the extent Infineon has given its express written consent.

To the fullest extent permissible pursuant to applicable law, with respect to any information given in this document or in any associated documentation, Infineon disclaims all warranties and liabilities of any kind, whether express or implied, including but not limited to any warranties of merchantability, suitability of the products for the intended application or the specific use, or non-infringement of third-party rights.

Subject to the development and release of the products for series supply by Infineon, the technical specifications of the products are set forth in the relevant final data sheet provided by Infineon and, if any, agreed and signed specifications. Infineon’s customers are required to evaluate the suitability of the products for the intended application or specific use.

The information given in this document is subject to change by Infineon at any time without notice.



Scan QR code and explore offering
www.infineon.com