

BRIGHTLANE™ secure automotive switch



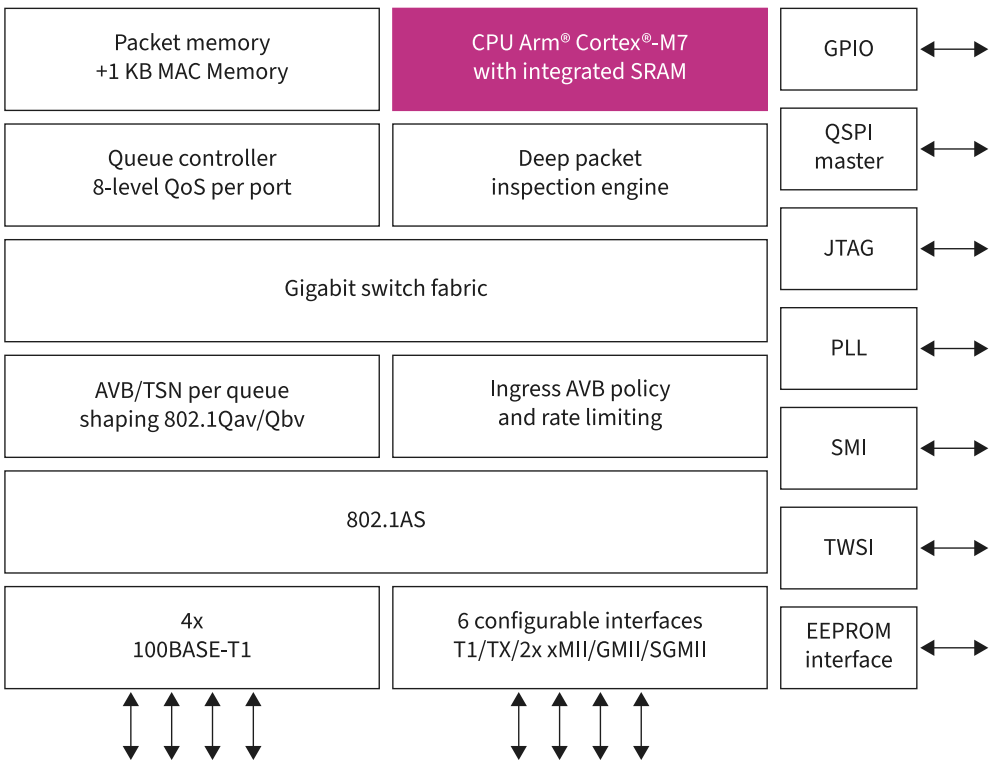
Secure 8-port automotive Ethernet switch with Deep Packet Inspection (DPI)

Infineon’s second generation secure automotive BRIGHTLANE™ Ethernet switch, 88Q5050, is an 8-port Ethernet gigabit capacity switch that is fully compliant with IEEE802.3 automotive standard and utilizes advanced security features to guard against hacking and Denial of Service (DoS) attacks.

The 8-port Ethernet switch offers 4 fixed IEEE 100BASE-T1 ports, and a configurable selection of an additional 4 ports from 1x IEEE 100BASE-T1 port, 1x IEEE 100BASE-TX, 2x MII/RMII/RGMII ports, 1 GMII port, and 1 SGMII port. The switch offers local and remote management capabilities, providing easy access and configuration of the device.

This switch employs the highest hardware security features that are designed at the root source of Infineon’s secure automotive Ethernet switch to prevent malicious attacks or compromises to the data streamed in the vehicle. This advanced switch employs Deep Packet Inspection (DPI) techniques and trusted boot functionality to deliver industries most secure automotive Ethernet switch. The switch supports both black-listing and whitelisting addresses on all its Ethernet ports to further enhance its security.

BRIGHTLANE™ 88Q5050 block diagram



PRODUCT BRIEF

Key features

Features	Benefits
Processor	– Integrated Arm® Cortex®-M7 CPU, 250 MHz
I/O interfaces	– 4 IEEE 100BASE-T1 – Additional 4 ports configured from: – 1 IEEE 100BASE-T1 port – 1 IEEE 100BASE-TX – 2 MII/RMII/RGMII ports – 1 GMII port – 1 SGMII port – 2 SMI – Master interface to connect to external PHYs or additional switches – Slave interface to manage the switch – Configurable GPIOs – QSPI with configurable frequencies (19.2–83.3 MHz) – TWSI master interface – JTAG
Package characteristics	– 88Q5050: 128-pin LQFP package, 0.5 mm pitch, 14 x 20 mm – 88Q5054: 228-pin BGA package, 0.8 mm pitch, 13 x 13 mm
EEPROM	– Slave interface with loader to configure the switch (32 kb–512 kb)

Key features

- Integrated Arm® Cortex®-M7 CPU, 250 MHz
- AEC-Q100 grade 2 qualified
- Advanced automotive security features, including deep packet inspection and trusted boot functionality
- Extremely low power consumption for automotive 100BASE-T1 PHY cores
- Fast configuration and CPU boot times

Target applications

Current applications

- Gateway
- In-vehicle infotainment
- Advanced Driver Assistance Systems (ADAS)

Future applications

- Autonomous driving

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