

# MARVELL® SECURE AUTOMOTIVE SWITCH

Secure 8-port Automotive Ethernet Switch with Deep Packet Inspection (DPI)

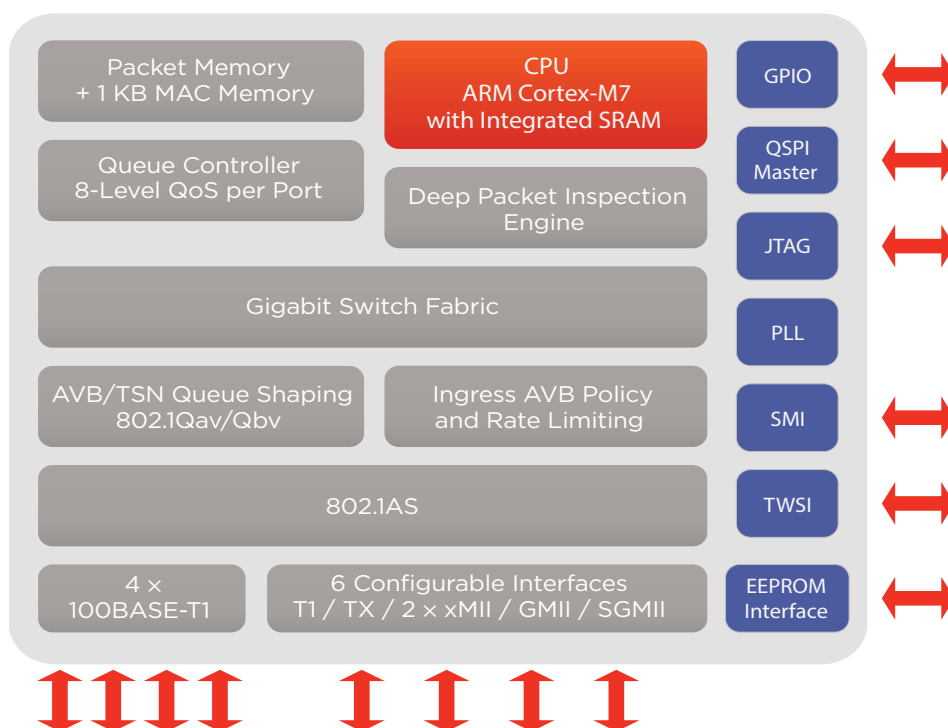
## PRODUCT OVERVIEW

Marvell's highly secure automotive Ethernet switch, 88Q5050, is an 8-port Ethernet gigabit capacity switch that is fully compliant with IEEE802.3 and 802.1 automotive standards and utilizes advanced security features to guard against cyber threats like 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 1 IEEE 100BASE-T1 port, 1 IEEE 100BASE-TX, 2 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 AEC-Q100 Grade 2 qualified switch employs the highest hardware security features that are designed at the root source of Marvell'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 the industry's most secure automotive Ethernet switch. The switch supports both blacklisting and whitelisting addresses on all its Ethernet ports to further enhance its security.

## BLOCK DIAGRAM



## KEY FEATURES AND BENEFITS

| FEATURES                | BENEFITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor               | <ul style="list-style-type: none"> <li>• Integrated ARM Cortex-M7 CPU, 250MHz</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| IO Interfaces           | <ul style="list-style-type: none"> <li>• 4 IEEE 100BASE-T1</li> <li>• Additional 4 ports configured from:               <ul style="list-style-type: none"> <li>- IEEE 100BASE-T1</li> <li>- IEEE 100BASE-TX</li> <li>- MII/RMII/RGMII</li> <li>- GMII</li> <li>- SGMII</li> </ul> </li> <li>• 2 SMI               <ul style="list-style-type: none"> <li>- Master interface to connect to external PHYs or additional switches</li> <li>- Slave interface to manage the switch</li> </ul> </li> <li>• Configurable GPIOs</li> <li>• QSPI with configurable frequencies (19.2MHz-83.3 MHz)</li> <li>• TWSI Master interface</li> <li>• JTAG</li> </ul> |
| Package Characteristics | <ul style="list-style-type: none"> <li>• 128-pin LQFP package, 0.5 mm pitch, 14mmx20mm</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| EEPROM                  | <ul style="list-style-type: none"> <li>• Slave interface with loader to configure the switch (32Kb-512kb)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Switch Fabric           | <ul style="list-style-type: none"> <li>• Gigabit Switch Fabric</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## TARGET APPLICATIONS

### Current Applications:

- Gateways, In-Vehicle Infotainment
- Advanced Driver Assistance Systems

### Future Applications:

- Autonomous Driving



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