SJA1110 100Base-T1 Multi-Gig Ethernet Switch Example Board

MR-T1ETH8

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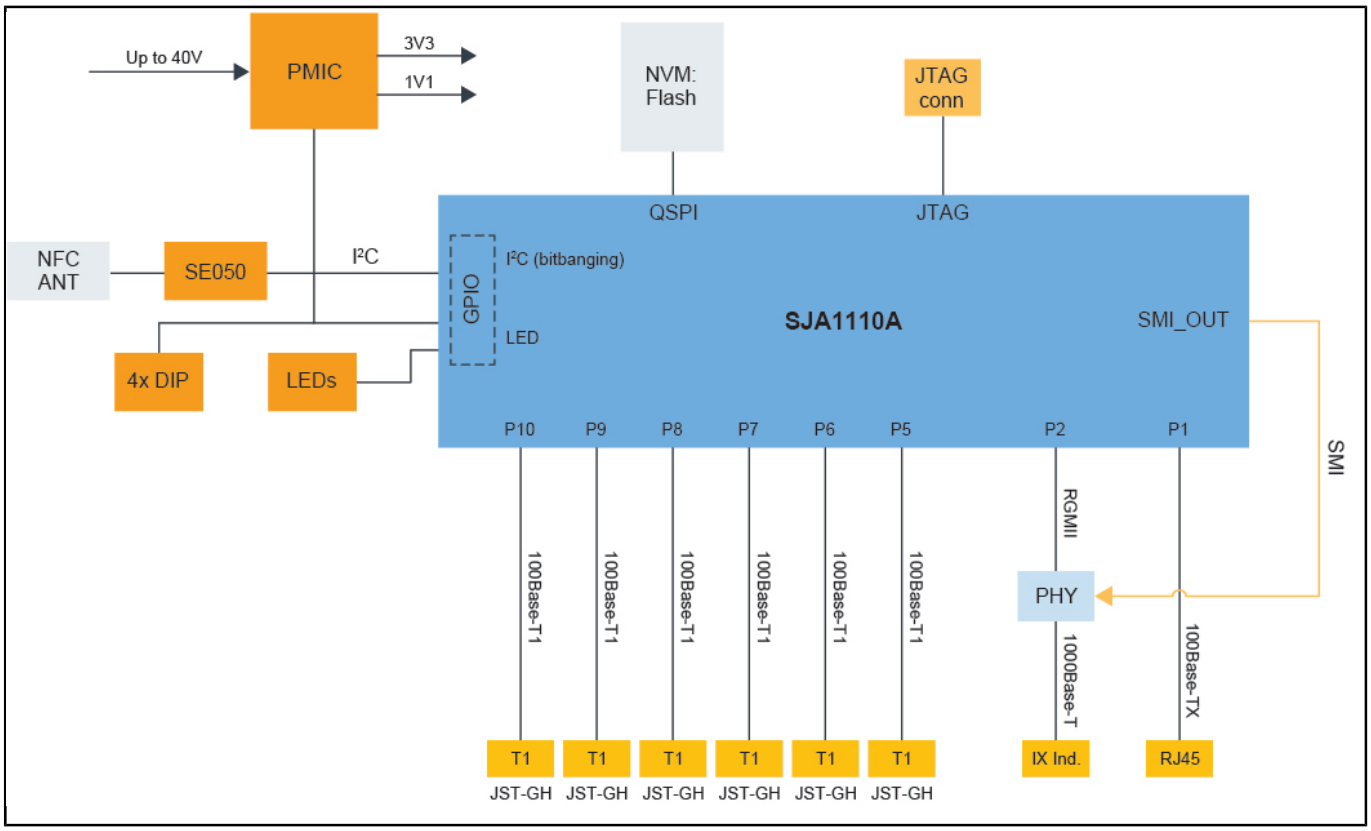
The MR-T1ETH8 is a development board based on the SJA1110 Multi-Gig Safe and Secure TSN Ethernet switch with Integrated 100BASE-T1 PHYs. It is designed to target automotive and mobile robotics applications. The board implements the SJA1110A Ethernet switch and is compatible with the the SJA1110 SDK and AVB/gPTP middleware.

Targeting weight-constrained networking on mobile-robotics applications such as drones and rovers, the board also supports an NXP SE050 secure element with NFC for secure identification of modules, encryption key storage and capability of setting configurations and reading status via NFC. The robust automotive grade VR5510 PMIC for power management supports a wide operating voltage range to 40 V input.

Eight of the ten available SJA1110 ethernet interfaces are presented on this board. Six are 100Base-T1 “two wire”, one traditional 100Base-T using an RJ45 connector and one 1000Base-T interface using the new rugged ix industrial connector standard. The ix Industrial connector can adapt via a cable to RJ45, or can be connected to ix to ix to other boards that NXP provides for mobile robotics development.

MR-T1ETH8 Block Diagram



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