![NXP logo]

TJA1120 ASIL B COMPLIANT 1000BASE-T1 ETHERNET PHY

TJA1120 is NXP's 1000BASE-T1 Automotive Ethernet PHY, which allows for 1 Gb/s communication speed grade over a single pair of wires.

It is compatible with TJA1103 to enable speed grade scaling from 100 Mb to 1 Gb. The TJA11xx-EVB evaluation kit provides the reference layout for drop-in replacement.

TJA1120 supports the growing data rate requirements of edge nodes, zonal controllers, gateways and communication backbones to central compute units.

TJA1120 interoperability and compliance was tested against state of the art conformance test specifications.

Seamless connection to switches and host controllers is ensured by product versions with RGMII and SGMII MAC interface. To support the safety goals at vehicle level, the TJA1120 is designed according to ISO 26262 to meet ASIL B. Its enhanced monitoring and diagnostic features support fast event localization and swift system response.

- Optimized for automotive use cases
- 3V3, 1V8, 1V1 direct supply

AUTOMOTIVE TARGET APPLICATIONS
- Radar systems
- Sound system
- Vision systems and cameras, car radio, remote tuner
- E-cockpit and head unit
- TCU
- Gateway and domain controller
- Zonal controller, central compute unit

KEY FEATURES
- Functional safety ISO 26262 ASIL B compliant
- OPEN Alliance TC-1 advanced PHY features
- IEEE1588v2/802.1AS compliant time stamping
- OPEN Alliance TC-10 compliant sleep/wake up
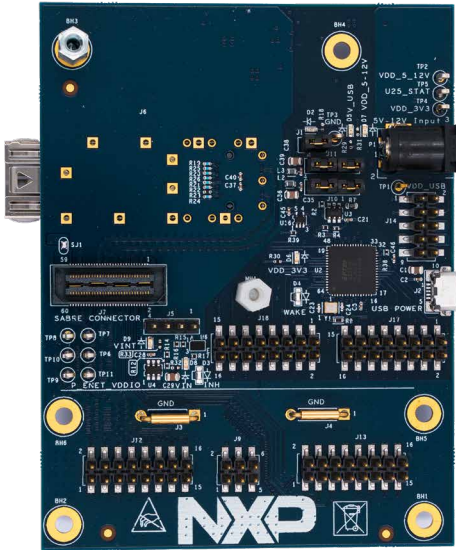- HVQFN36 (6 x 6 mm) with wettable flanks

For additional information and sample availability, contact your local sales office or visit **https://www.nxp.com/TJA1120**

TJA11XX-EVB - EVALUATION BASE BOARD

The TJA1120 evaluation kit enables the functional evaluation of the PHY and consists of the TJA11XX-EVB base board and TJA1120-SDBx adapter cards. The latter gets mounted via SABRE connector and carry the selected TJA1120 variant. To flexibly adapt to different application use cases, all configuration options can be selected via jumpers and all logic interfaces can be accessed via pin headers on the base board.
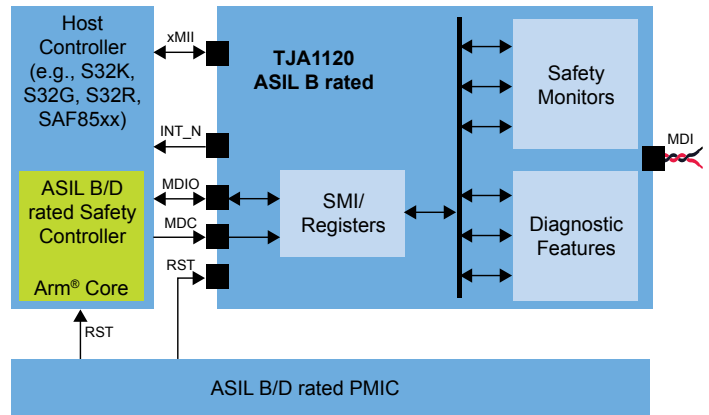
The TJA1120-SDBx card is available in 2 variants: TJA1120-SDBR (with TJA1120A) offers RGMII, and TJA1120-SDBS (with TJA1120B) offers SGMII. Users, who need to evaluate the RRGMII/SGMII datapath in an application context together with NXP processors, can use the same TJA1120-SDBx SABRE card for software engineering and application prototyping. Various NXP system development boards feature the common SABRE connector; for example, our latest S32K3, S32G and i.MX 8 processors.

As ASIL B Safety Element out of Context (SEooC), the TJA1120 provides all features and documentation needed for functional safety development. Safety monitors and diagnostic functions enable the host controller to realize fast failure detection and localization for an optimized system response.

TJA1120-SDBR/SDBS – SABRE DEVELOPMENT BOARD
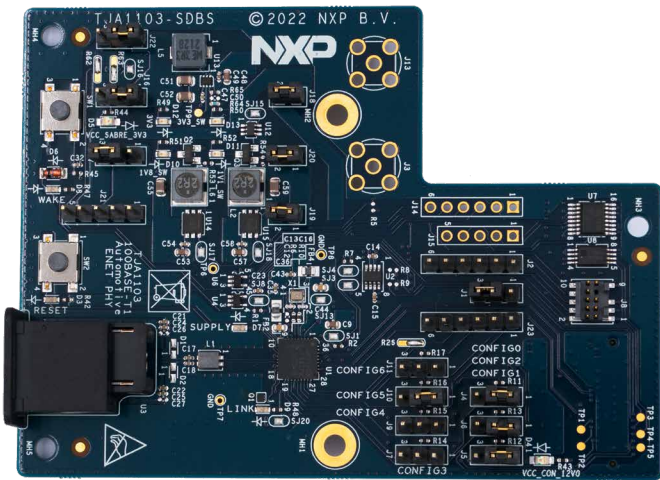
TJA1120 EXAMPLE APPLICATION

SAFE ASSURE
by NXP