



**THE DATASHEET OF
ADTJA1101-RMII**



ADTJA1101-RMII

TJA1101 Adapter Card

User Guide

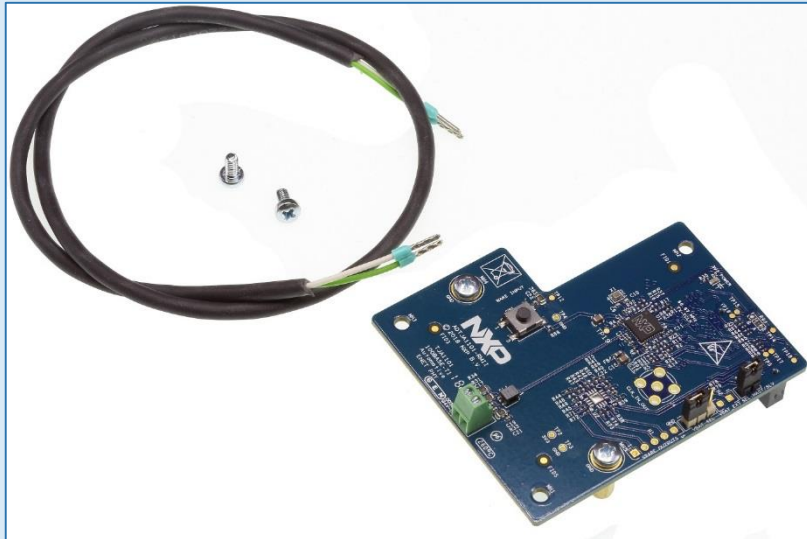
September 2018



ADTJA1101-RMII – Getting started

Components in the box:

- Board: [ADTJA1101-RMII](#)
- Cable: 0.5m of jacketed Unshielded Twisted Pair (UTP), automotive grade



Get additional documentation for

- ADTJA1101-RMII
 - Gerber
 - Schematics / BoM
- TJA1101
 - Datasheet
 - Application Hints
 - Etc...

from NXP's document repository

→ www.docstore.nxp.com

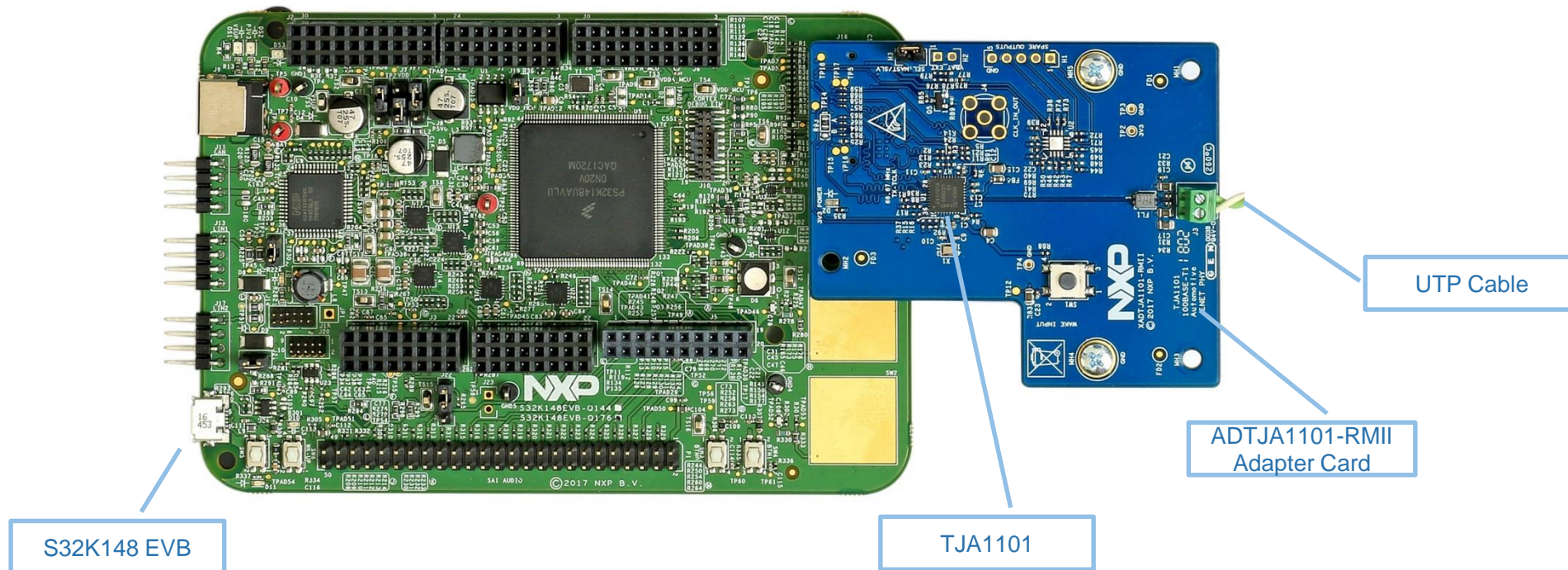
- Register (NDA required) / Login
- Navigate:
 - Products → In-Vehicle Networking → Automotive Ethernet → ADTJA1101-RMII

SABRE Connector

- [SABRE = Smart Application Blueprint for Rapid Engineering](#)
- Accelerate your time to market with our premiere series of market-focused development systems based on application controllers: Smart Application Blueprint for Rapid Engineering (SABRE). SABRE platforms deliver the advanced technology features required for next-generation automotive systems.

ADTJA1101-RMII – Application

- The [ADTJA1101-RMII](#) is a daughter card carrying NXP's [TJA1101](#) 100BASE-T1 Ethernet PHY
- It adapts to micro controller development boards with SABRE connector, e.g. [S32K148EVB](#)
- The full TJA110x driver set is supported by the [S32K148EVB SDK](#).

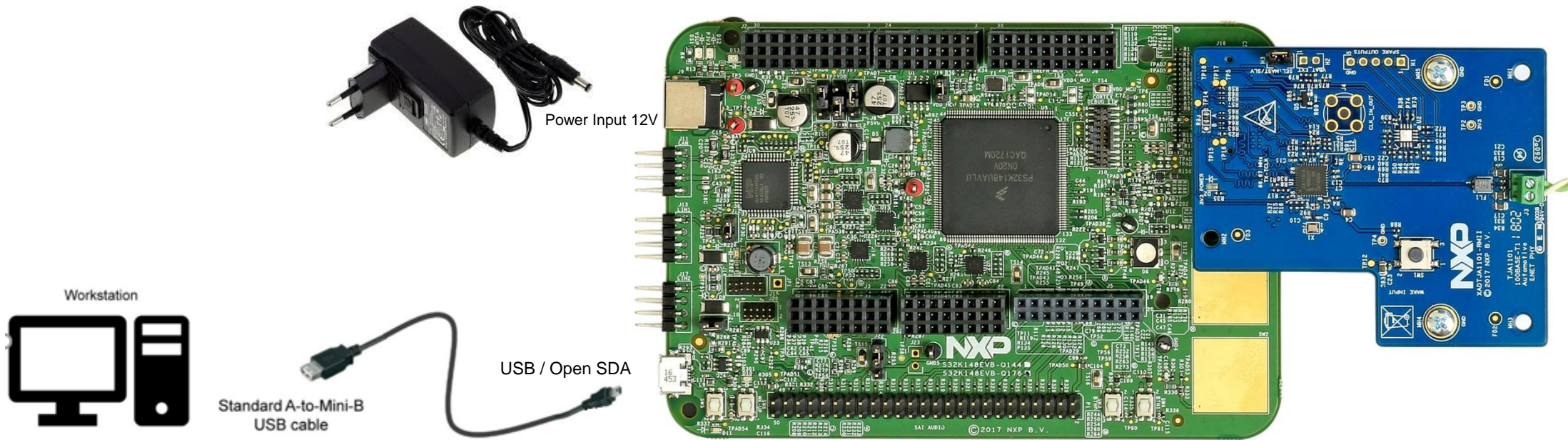


ADTJA1101-RMII Power Up

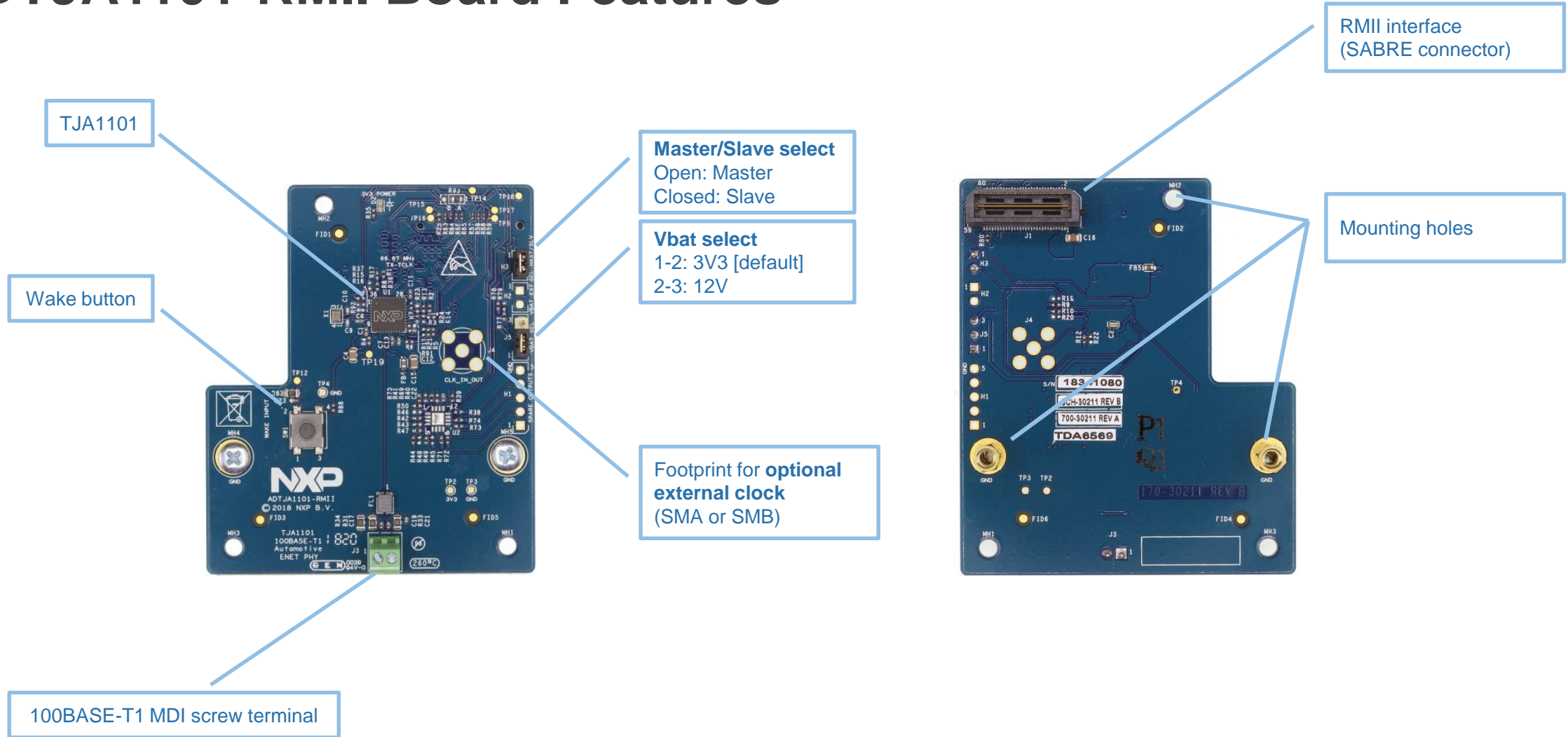
Power input options:

- Power Input 12V
- USB / Open SDA

For Jumper Settings please refer to [S32K148EVB Quick Start Guide](#)

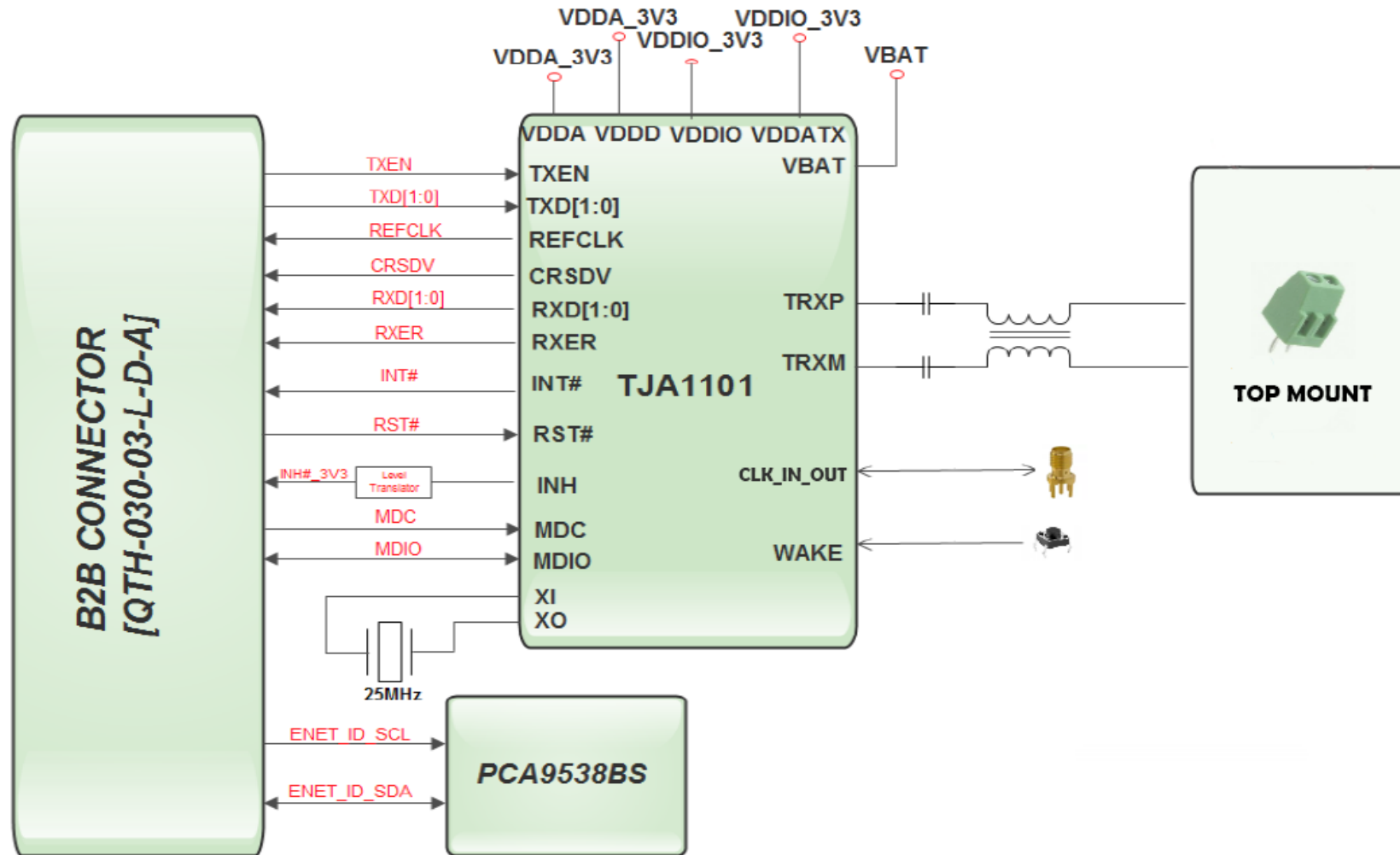


ADTJA1101-RMII Board Features



For configuration options of TJA1101 → please refer to [product data sheet](#)

ADTJA1101-RMII Block Diagram



TJA110x driver pre-integration with S32K SDK

- Production grade driver support is pre-integrated with SDKs for NXP microcontrollers
- GUI configuration support in S32 Design Studio IDE
→ see screenshot
- Supports TJA1100, TJA1101 and TJA1102(S)
 - Support for generic PHY devices using IEEE registers
- Currently supported by:
 - S32K SDK v0.8.6
 - MPC574x SDK v0.9.0
 - i.MX8 SDK (planned)
- [Download](#) S32K SDK

GUI Driver Configuration

The screenshot shows the 'PHYs' configuration window in the S32 Design Studio IDE. It features a 'PHYs list' table with columns for #, PHY, PHY Type, Address, PHY Location, PHY Role, and ENET instance. Below the table, the 'Details for selected row' section shows configuration options for PHY 4, including PHY Type (Generic), Address (8), PHY Location (External), PHY Role (Automatic configuration, i.e. use the def...), and ENET instance (0). There are also fields for Link Up Event Callback, Link Down Event Callback, and Auto-negotiation Complete Event Callback.

#	PHY	PHY Type	Address	PHY Location	PHY Role	ENET instance
0	<input checked="" type="checkbox"/>	TJA110x	1	External	Master	0
1	<input checked="" type="checkbox"/>	TJA110x	2	External	Slave	0
2	<input checked="" type="checkbox"/>	TJA110x	3	External	Master	0
3	<input checked="" type="checkbox"/>	TJA110x	4	External	Master	0
4	<input checked="" type="checkbox"/>	Generic	8	External	Automatic conf...	0

Details for selected row:

PHY 4

PHY Type: Generic

Address: 8

PHY Location: External

PHY Role: Automatic configuration, i.e. use the def...

ENET instance: 0

Link Up Event Callback:

Link Down Event Callback:

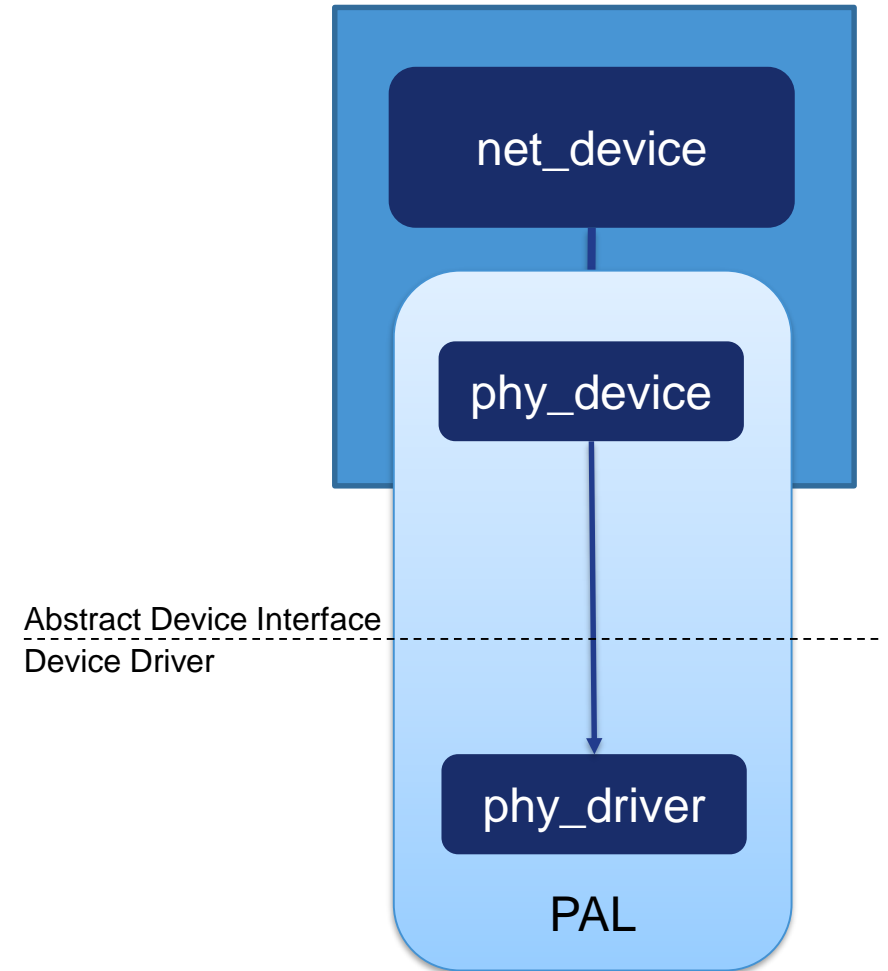
Auto-negotiation Complete Event Callback:

Linux Driver for TJA110X

- Single Linux driver for TJA110x
- Integrates into Linux' PHY Abstraction Layer (PAL)
- Extended with automotive features
 - Support for Managed and Autonomous Mode
 - Master/Slave configuration
 - Cable Test
 - LED, Loopback and Test Modes
 - Sleep and Wakeup
- Implements polling of interrupt status register
 - Warning about and reaction to failure conditions

→ Download [here](#)

→ FAQ [here](#)



ADTJA1101-RMII Compatible Controller Boards

- [S32K148EVB: S32K148 Evaluation Board](#)
 - Low-cost evaluation platform and development system for quick application prototyping with the S32K148 MCU belonging to the S32K series of Ultra-Reliable Microcontrollers (MCUs).

- i.MX8 (board to be released soon)



NXP Link Partner Boards for 100BASE-T1 System Setup

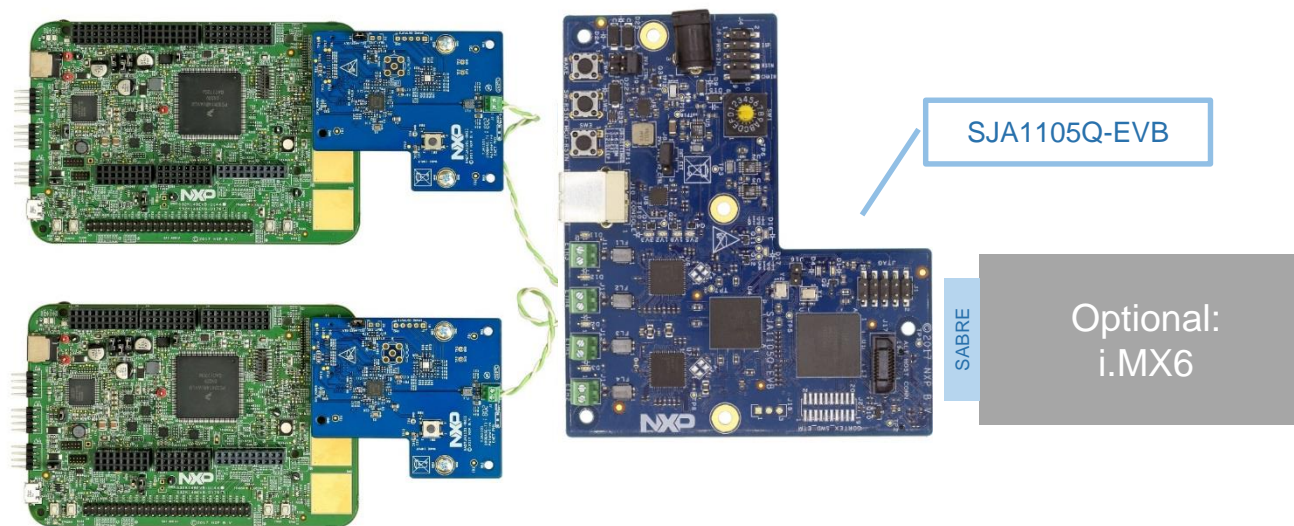
- [SJA1105SMBEVM](#): Gateway Prototyping Platform
 - Enables early SW development for SJA1105P/Q/R/S Automotive Ethernet switch family and the TJA1102 Automotive Ethernet PHYs on a market-leading Automotive MPC5748xG MCU.
- [SJA1105Q-EVB](#): Ethernet Switch & PHY Evaluation Board
 - An evaluation system that supports the SJA1105P/Q/R/S Automotive Ethernet switch family in conjunction with the TJA1102HN Ethernet PHY Transceiver.
- [OM14500/TJA1101](#): 100BASE-T1 PHY Evaluation Board
 - Low-cost hardware development tool which supports the functional evaluation of the 100BASE-T1 PHY transceiver TJA1101.
- [FibreCode FC602 USB OABR Stick](#):
 - The FC602 USB OABR Stick functions as seamless media converter between a standard USB 2.0 interface and an automotive Ethernet network. On Windows and Linux host PCs the USB OABR Stick is detected as standard Ethernet device.



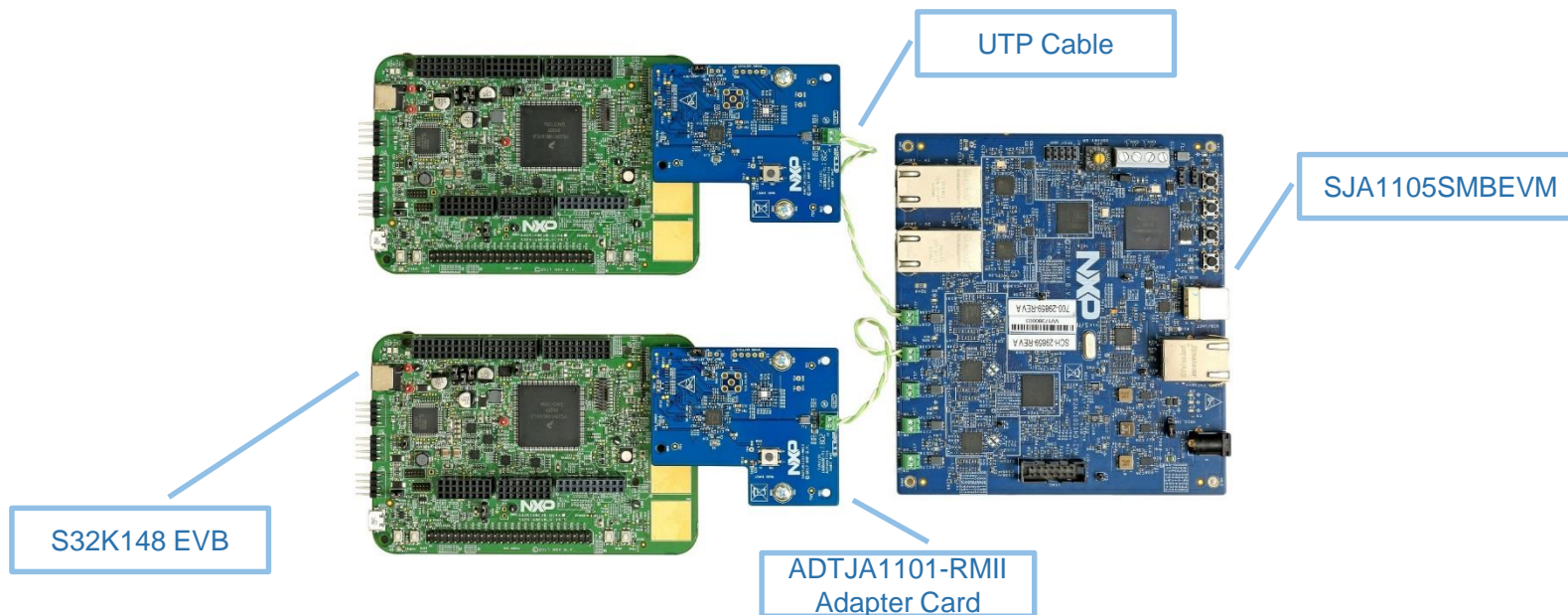
... ADTJA1101-RMII is generally interoperable to any other 100BASE-T1 link partner

ADTJA1101-RMII Connected System Examples

#1



#2



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 [NXP / Nexperia Information](#)

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