# TJA1445, TJA1446, TJA1465, TJA1466 – CAN FD TRANSCEIVERS WITH PARTIAL NETWORKING

The TJA1445, TJA1446, TJA1465 and TJA1466 are part of NXP's portfolio of high-speed CAN sleep mode transceivers which support partial networking by means of a selective wake up feature, as specified in ISO11898-2.

Partial networking transceivers help optimize the system energy efficiency by allowing inactive ECUs to remain in low-power mode (switched-off) while other ECUs remain active on the bus. Switching off ECUs can be done through the INH pin of the CAN transceiver. The switched-off ECUs can wake-up on local wake-up requests or through remote (CAN bus) partial networking wake-up requests which contains the ECU's specific CAN ID.

In electric vehicles, the reduction of energy consumption with a partial networking approach results in $CO_2$ emission reduction and positively impacts the vehicle cruising range and charging needs (= cost).

Keeping ECUs powered-off also prevents electric components being exposed to power with component degradation as a result, hence ECU lifetime can be extended.

In the SDV vehicle concept, partial networking offers the flexibility to dynamically and selectively enable or disable ECUs, which allows e.g. functions to be disabled while not being activated (OTA update/purchase) by the end-user. Unused ECUs will then not drain the battery, will not degrade and will be functionally blocked for end user access.
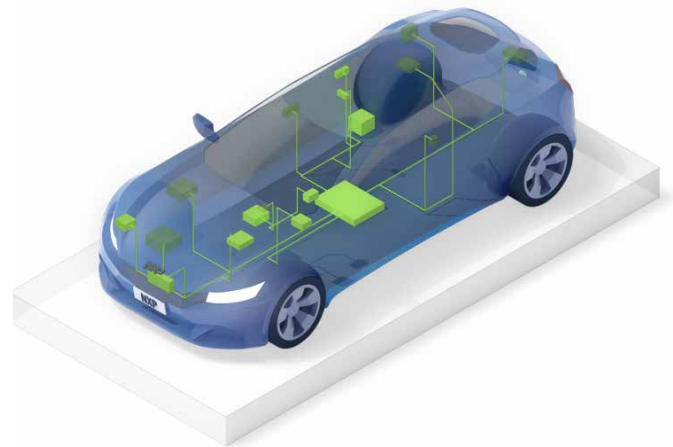
The products include a SPI for configuration, mode control and diagnostics.

The devices can be configured to ignore CAN FD frames while waiting for a valid wake-up frame. This additional feature of partial networking, called CAN FD passive, is the great fit for networks that support a mix of classical CAN or CAN FD communications. It allows classical CAN controllers that do not need to communicate CAN FD messages to remain in partial networking sleep/standby mode during CAN FD communication without generating bus errors.

Next to TJA144x, the TJA146x is available which features CAN Signal Improvement and supports use cases where higher CAN speeds and/or highly complex topologies are targeted.

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