

Frequently Asked Questions

Product Name: System Basis Chips (SBCs)

Date: April 2013

Application: Automotive ECUs

Datasheet: www.infineon.com/SBC

Contact Person: Norbert Ulshoefer/Antonio Monetti

Note: The following information is given as a hint for the implementation of the device only and shall not be regarded as a description or warranty of a certain functionality, condition or quality of the device.

Driver SBC	
Question 1:	How can I use the TLE926xQX integrated High Side Switches?
Answer:	TLE926xQX High Side Switches can be used to supply small loads like LED or for switch monitoring in cyclic sense configuration. High Side Switches are protected against over-current and over-temperature. An open-load detection feature is also implemented to monitor the status of the connected load.
Question 2:	Can I connect together the TLE926xQX High Side Switches to increase the current capability?
Answer:	TLE926xQX High Side Switches can be combined to increase the current capability, nevertheless the power dissipated on the device need to be taken into account to avoid thermal issues (e.g. thermal shutdown)
Question 3:	How can I use the TLE926xQX Low Side Switches?
Answer:	Low Side Switches can be used to drive on-board relays (e.g. used to drive a motor). Low Side Switches are protected against over-current and over-temperature.
Question 4:	Can I connect together the TLE926xQX Low Side Switches to increase the current capability?
Answer:	TLE926xQX Low Side Switches can be combined to increase the current capability, nevertheless the power dissipated on the device need to be taken into account to avoid thermal issues (e.g. thermal shutdown)
Question 5:	Can I use the integrated High Side Switches of TLE926xQX to supply an off-board load?
Answer:	Yes, TLE926xQX High Side Switches can be used to supply an off-board load (e.g. external sensor)
Question 6:	What external components are needed to protect the Integrated High Side Switches on TLE926xQX?
Answer:	A capacitor of 10nF close to the connector is required for HS1/2, if connected off-board, to fulfill ESD GUN requirements while for HS3/6 is required a capacitor of 33nF. Depending on the board layout a capacitor of 47pF close to the device pin might be necessary for optimum EMC performance.
Question 7:	Is the LIN transceiver on TLE926xQX compatible also with LIN 1.3?

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Answer:	LIN transceiver integrated in TLE926xQX is compliant to the specification LIN2.2. The physical layer specification LIN2.2 is a super set of the previous LIN specifications, like LIN 2.0 or LIN 1.3. The integrated LIN transceivers are according to the LIN2.2 standard and compatible with LIN 1.3. The device is compliant to the physical layer standard SAE-J2602-2. The SAE-J2602-2 standard differs from the LIN2.2 standard mainly by the lower data rate (10.4Kbit/s).
Question 8:	Can I use the new TLE926xQX SBC in a 24V automotive system?
Answer:	<p>TLE9276xQX SBCs, like the predecessors, are designed to work on a 12V automotive system. All the pins that can be connected outside the ECU are therefore designed to withstand to load dump to max. 40V for max. 400ms. 24V automotive systems requires load dump higher than 40V therefore, to use TLE926xQX SBC in a 24V system, an external protection need to be considered.</p> <p>The voltage regulators implement on TLE926xQX are linear voltage regulator, therefore the power dissipated internally, in case of usage on a 24V automotive system, need to be properly analyzed and addressed.</p>
Question 9:	Can I use the TLE926xQX SBC in a ECU with ambient temperature (Ta) of 105°C?
Answer:	For high ambient temperature and high loads special care needs to be taken during the PCB design to extract the power dissipated inside the SBC in order to avoid thermal issues (e.g. thermal shutdown). The ECU has to be designed to avoid exceeding a junction temperature Tj of 150°C.
Question 10:	Is there a demo board available for TLE926xQX?
Answer:	Yes, a demo board for TLE926xQX is available and can be ordered through our sales channels. With this demo board will be possible to start the evaluation of the device in a very easy and intuitive way. The board can be connected to the XC2000 Power Easy Kit (needs to be ordered separately) and using a Graphical User Interface (GUI), installed on your computer, and a USB cable, will be extremely easy to get familiar with the numerous features of the SBC. Together with the demo board, Infineon provides a second board (daughter board) with an open-top socket to easily install/replace the SBC. The daughter board can be connected easily to the main board.

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