TLE983x System-on-Chip
Smart LIN-based Relay Driver IC & Switch Panel Interface with integrated 8-bit MCU

The TLE983x is a single chip solution that integrates a high performance 8-bit microcontroller derived from the established XC800 family with application specific power drivers, control and communication modules in an automotive qualified new Smart-Power Technology.

The TLE983x family concept offers scalability in terms of Flash memory sizes ranging from 36kB to 64kB with pin-compatible devices.

The TLE983x family was specifically designed to fit to a wide range of LIN-slave applications where a small package form factor and a minimum number of external components is essential.

Targeted Automotive Applications
- Window Lift
- Power Seats
- Sun Roof
- Fan/Blower Control
- Key Pad Interface
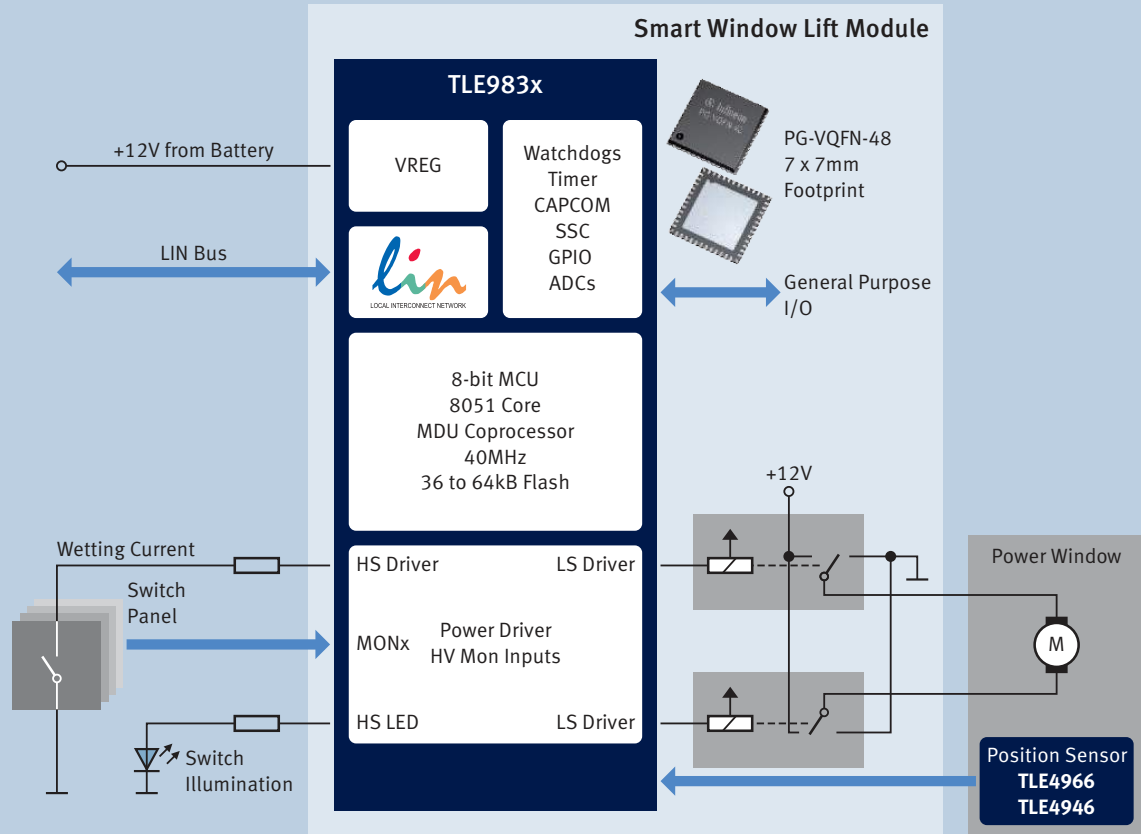- Switch Panel Interface

Key Features

- 8051-based MCU @40MHz
- 36 to 64kB Flash memory
- 4kB EEPROM emulation
- On-chip debug interface (2-wire)
- LIN Transceiver compliant with LIN standards 1.3, 2.0, 2.1 and SAE J2602 – supports fast programming via LIN
- Voltage Regulator for supply of internal and external circuits (5V)
- High-Side & Low-Side Switches with PWM capability
- Integrated measurement interface for monitoring battery voltage and chip temperature
- 10-bit ADC converter
- CAPCOM6 for ext. motor control

Key Benefits
- Complete system-on-chip (SoC) for ECU's that communicate via LIN interface with main ECU
- High-voltage monitoring inputs for off-board switch control
- Highly flexible SoC through dedicated configuration registers for e.g. current and voltage settings as well as power saving modes
- High pin-count VQFN package with 7×7mm footprint enables space saving PCB designs

[www.infineon.com]

TLE983x System-on-Chip

Smart Window Lift Module

Smart Window Lift Module

TLE983x

+12V from Battery

VREG | Watchdogs Timer CAPCOM SSC GPIO ADCs

LIN Bus

lin
LOCAL INTERCONNECT NETWORK

PG-VQFN-48
7 x 7mm
Footprint

General Purpose I/O

8-bit MCU
8051 Core
MDU Coprocessor
40MHz
36 to 64kB Flash

+12V

Wetting Current

Switch Panel

HS Driver | LS Driver

MONx | Power Driver HV Mon Inputs

HS LED | LS Driver

Switch Illumination

Power Window

M

Position Sensor
TLE4966
TLE4946

Product Summary

Product P/N	Flash [kB]	Frequency [MHz]	HSS	HV MON	GPIO	OP-AMP	PN MOS DRV
TLE9835QX	64	40	2	5	11	Yes	Yes
TLE9834QX	64	40	2	5	11	No	No
TLE9833QX	48	40	2	5	11	No	No
TLE9832-2QX	36	40	2	5	11	No	No
TLE9832-2QV	36	40	2	5	11	No	No
TLE9832QX	36	40	1	5	11	No	No
TLE9832QV	36	40	1	5	11	No	No
TLE9831QV	36	40	1	5	5	No	No

ATTENTION PLEASE!
The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

INFORMATION
For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

WARNINGS
Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office. Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.