

A decorative header consisting of a series of overlapping, semi-transparent geometric shapes (triangles and polygons) in a color gradient from red on the left to green on the right.

CAN FD light for next generation E/E architectures

Gregor Sunderdiek, ME-IC/PAI1, 05th of Feb 2026

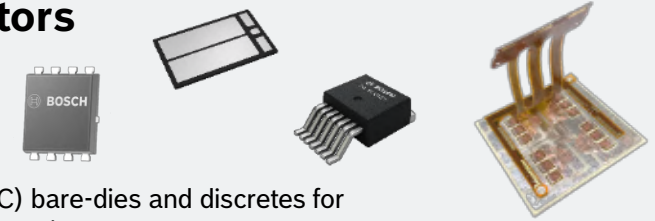
ME develops, industrializes and manufactures semiconductors and sensors for automotive applications and consumer electronics

MEMS-based products



- Accelerometers, gyroscopes, inertial measurement units (IMUs), massflow- and pressure sensors for safety, advanced driver assistance systems (ADAS), powertrain and comfort functions
- Accelerometers, gyroscopes, IMUs, magnetic sensors, pressure and gas sensors and optical microsystems for consumer devices and industrial
- MEMS foundry services for external customers

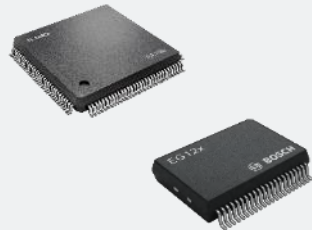
Power Semiconductors and Modules



- High voltage Silicon Carbide (SiC) bare-dies and discretes for traction inverters and power conversion
- High voltage power modules for electric powertrain
- Low voltage MOSFETs for many applications, low voltage power modules for electric drives and power tools.

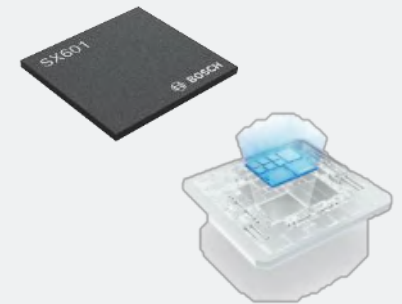
ASICs

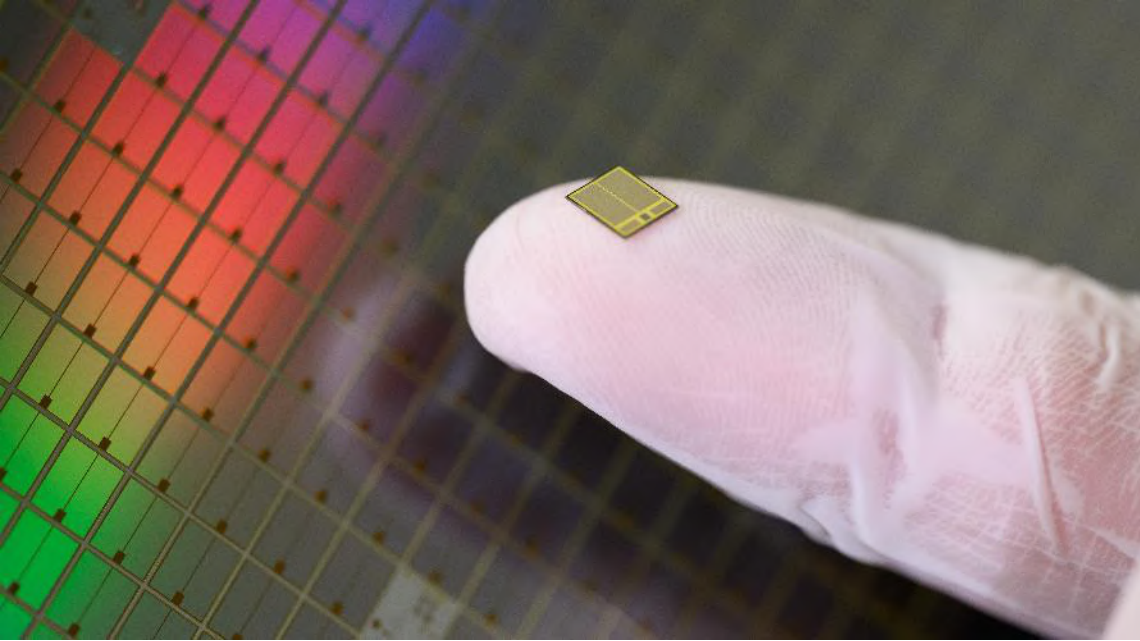
- System ICs for Safety, advanced driver assistance systems (ADAS), internal combustion engines (ICE) powertrain, electric powertrain and in-vehicle networking



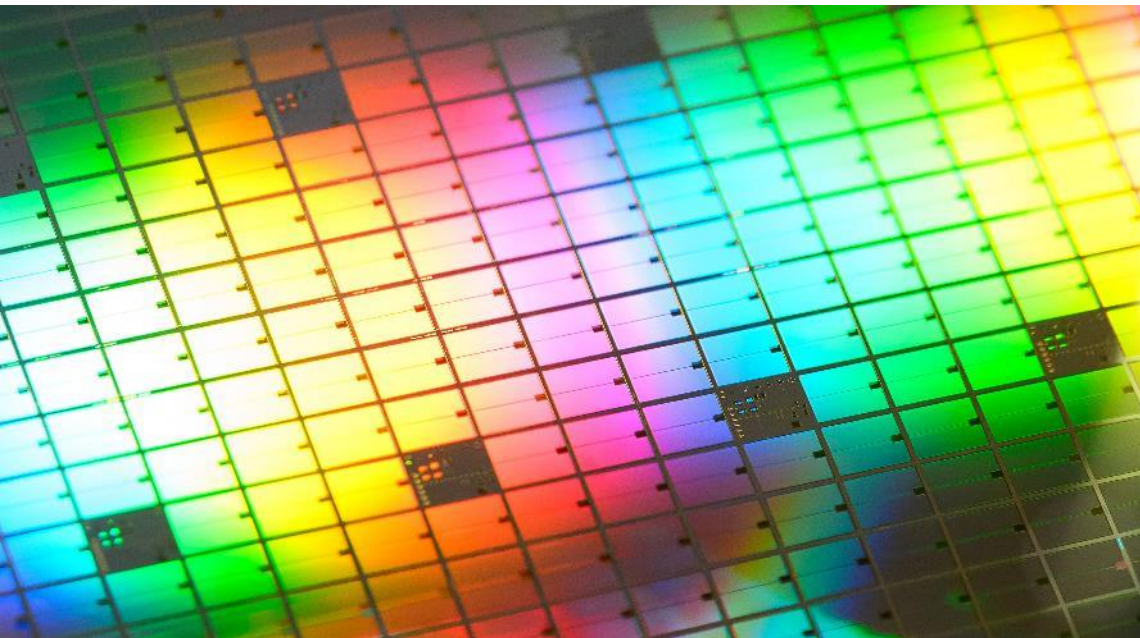
SoC & IP

- System-on-chip for advanced driver assistance systems (ADAS) and data transmission.
- IP modules for in-vehicle communication, I/O co-processing and video processing





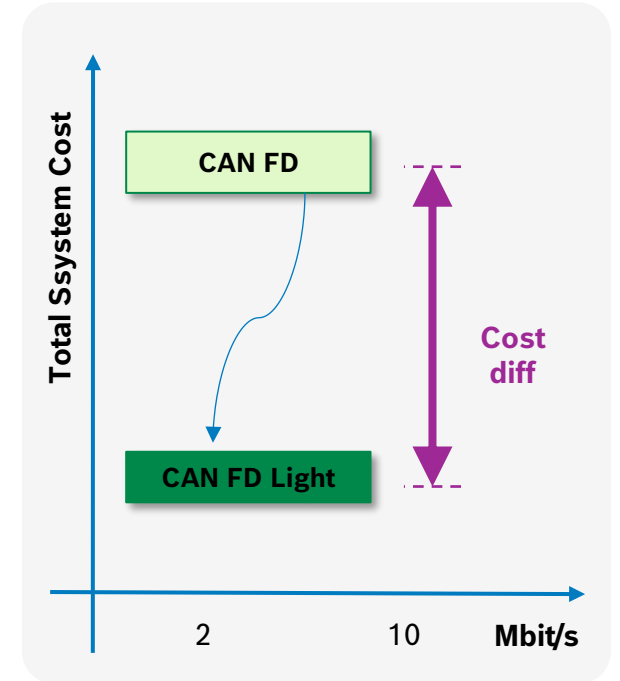
**Bosch offers its
semiconductor and sensor
portfolio directly to OEMs
and Tier-1 suppliers
and
semiconductor IPs
to mainly Tier-2 suppliers**



CAN FD light

What is CAN FD light?

**CAN FD light is a cost optimized CAN FD
(≈50% reduction)**

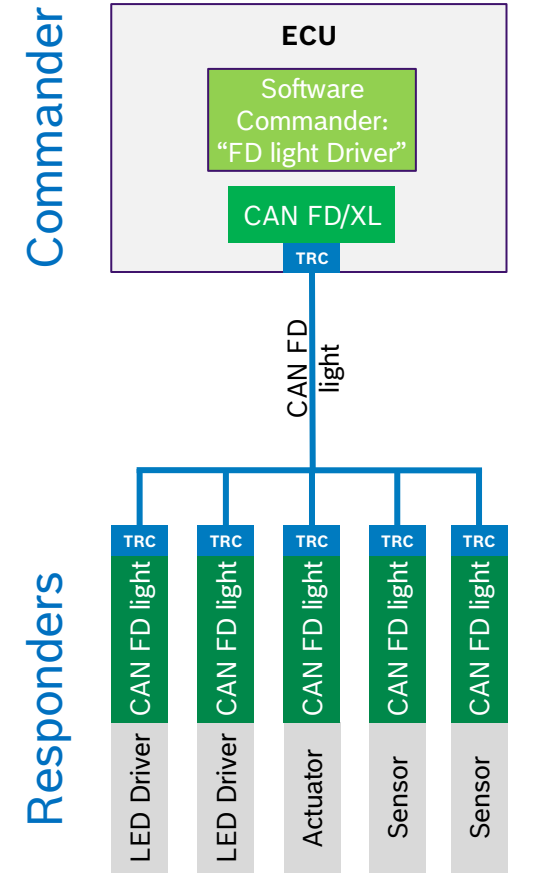


CAN FD light

What is CAN FD light?

CAN FD light is a cost optimized CAN FD (≈50% reduction)

- **Architecture:** 1x Commander and Nx Responders
 - CAN FD light commander controls communication (polling)
- **Commander:** All existing CAN FD/XL nodes
- **Responder:** low-cost CAN FD node
 - [Layer 1] No change, all CAN transceivers usable
 - [Layer 2] Simplified Protocol: sub-set of CAN FD
 - **No** arbitration, **No** error frames, **No** 29 Bit ID, **No** BRS bit rate switch, ...
 - **CAN FD frame format** with 11 Bit ID **used**
 - Standardized in ISO 11898-1:2024
- **Advantages**
 - Low-Cost (e.g. clock with ±4% usable, x10 more than FD → Save 0,40 US\$)
 - Monolithic integration possible of (1) Transceiver, (2) CAN FD light IP, (2) analog part
 - Larger net bit rate of than in CAN FD



Existing CAN FD / XL communication IP
Existing Transceivers, standalone or integrated

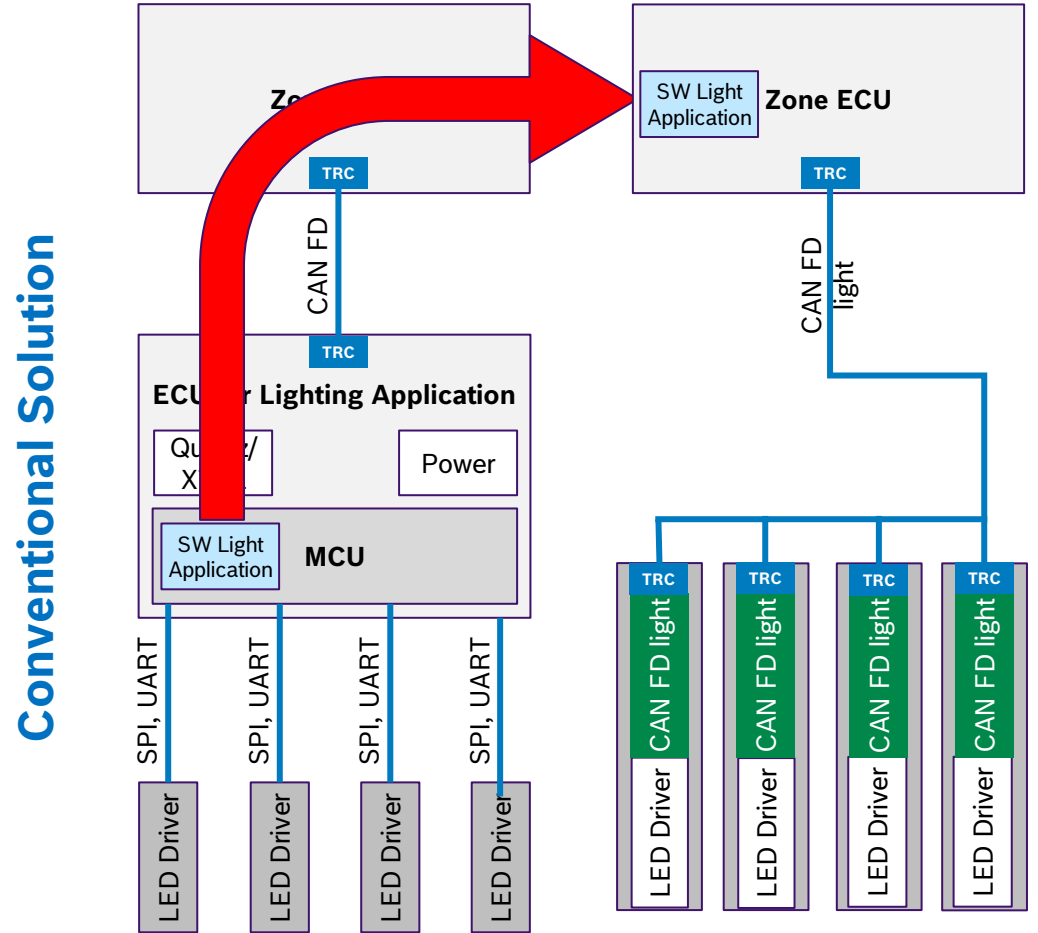
CAN FD light SDV (Software Defined Vehicle) – Lighting Example

ECU for Lighting

- LED Driver for Backlight, ADB, etc..

CAN FD light Responder nodes

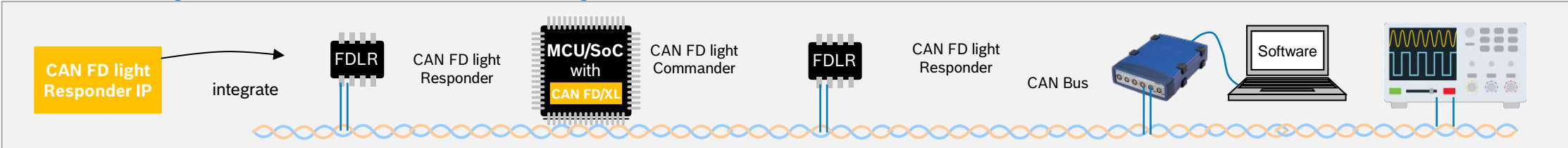
- Integrate analog LED driver in a monolithic design with the transceiver (optional), CAN FD light IP and state machine
- Move ECU for lighting application to the Zone ECU
 - Advantages
 - Only SW update in the Zone ECU
 - Easy update/change of lighting function
 - No SW in the end-node
 - Less maintenance for the OEM
 - Low-cost end-nodes
 - New E/E-Architecture possibilities



Cost Optimized Solution

CAN FD light – Next Step in CAN Evolution

ECO-System - Availability



CAN FD light Responder IPs (RTL)

- Arasan, [CAN FD light \[available\]](#)
- ST [\[used in L99LDLH32\]](#)
- TI [\[used in TCAN5102\]](#)
- Bosch: [FDLR_CAN \[available\]](#)

CAN FD light Responder

- **ST microelectronics**
[L99LDLH32](#) multi-pixel driver with CAN FD light incl. CAN FD Transceiver [\[available\]](#)
- **Texas Instruments**
[TCAN5102-Q1](#) CAN FD light Responder [\[samples available\]](#)

CAN FD light Commander

- **Use all existing CAN FD or CAN XL MCUs & SoCs *1** [\[available\]](#)
- **Texas Instruments**
CAN FD light Commander w/ 8Mbit/s [\[in development\]](#)
- **Bosch / XS_CAN IP**
CAN FD light Commander IP w/ 8Mbit/s [\[available\]](#)

CAN Transceiver

- CAN High Speed
- CAN FD
- CAN SIC
- CAN SIX XL
- NXP, Bosch, Infineon, TI, Rohm Technologies, Microchip Technologies, Melexis Technology NV, onsemi, Analog Devices Inc./Maxim Integrated and much more ... [\[available\]](#)

Tooling / Software

- **Use all existing tools CAN analyzer / oscilloscope / Software from**
 - Vector: [CANoe](#)
 - Keysight:
 - Teledyne LeCroy
 - Rohde & Schwarz
 - Pico Technology
 - And much more ... [\[available\]](#)

AUTOSAR: CAN FD supported [\[released & available\]](#)

*1 - CAN FD Light with max 8Mbit/s need new CAN FD Light Commander MCU
- with current Commander (1Mbit/s w/ CAN FD Transceiver or up to 2Mbit/s with CAN SIC Transceiver)

THANK YOU!



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