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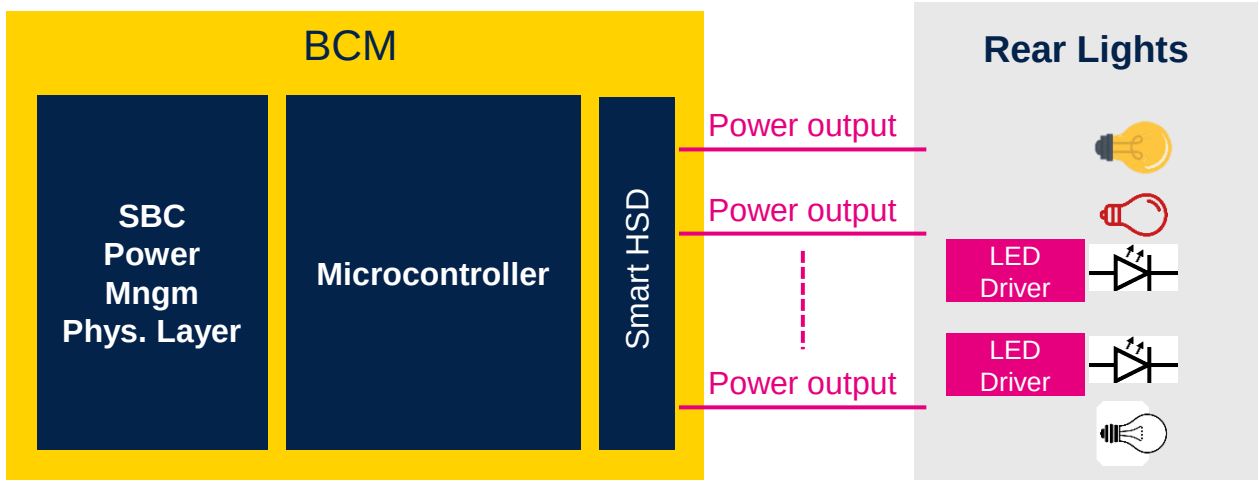
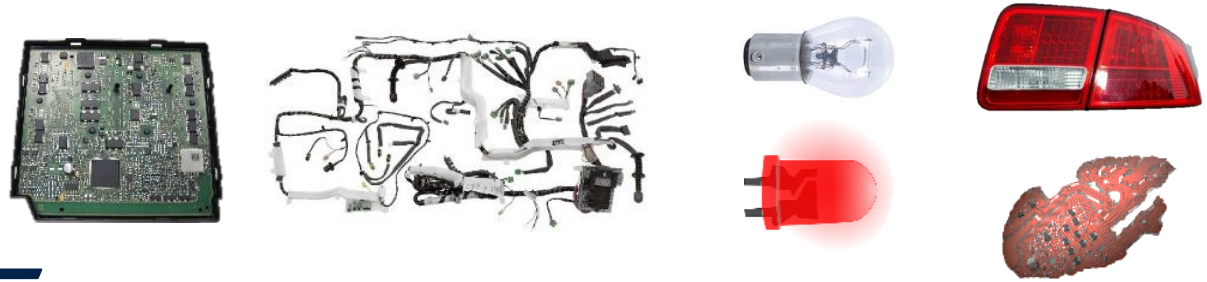
# ST solutions for rear LED/OLED lights

June 2020

# Rear lighting solutions

## What traditional Lighting was



- Quasi Static, some limited Dimming
- Some Differentiation, Large Space
- High Power Consumption, weak Diagnostic
- Bulb compatible interface to BCM mandatory

**Electronic Control required…**

- One Smart HSD for each light function
- PCB + lots of active and passive discretes in the rear light
- a lot of wires, 2~3 meters length, 0.75mm$^2$ size

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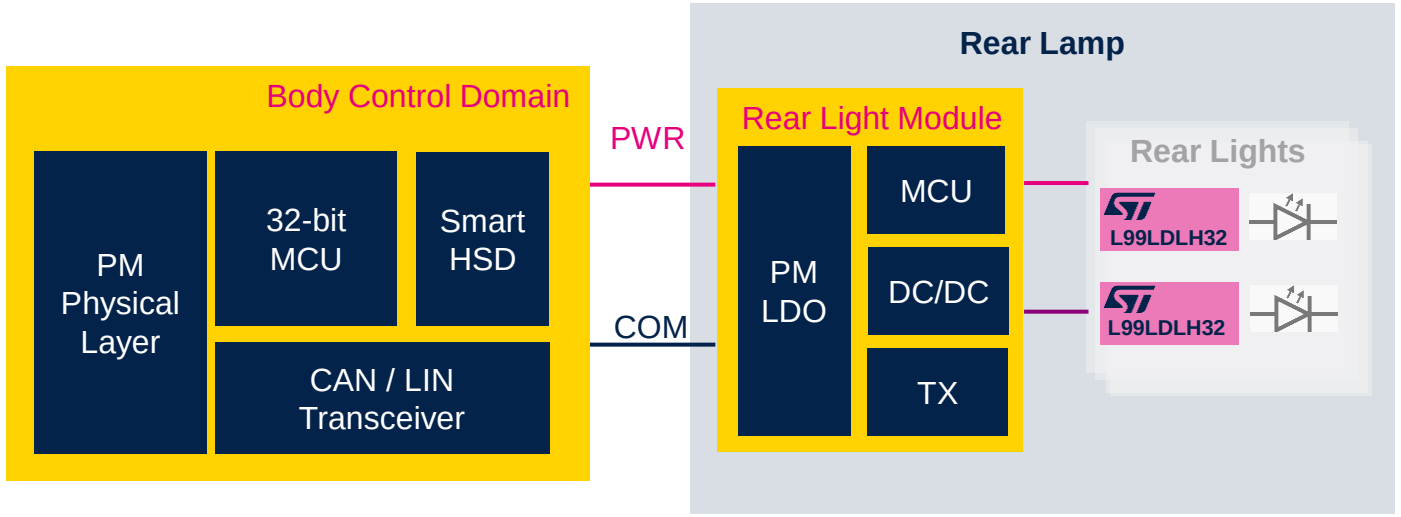
# Rear lighting solutions

## Conversion to Full LED/OLED Rear




private CAN-FD Light

- Dynamic Animation, multifunction Dimming
- Differentiation, Branding, small Space
- Low Power Consumption, Diagnostic
- Simplification of BCM possible

**Electronic Control required…**

- Less Smart HSD: One per lamp section
- Rear ECUs with uC, Transceivers, Voltage Regulators, + LED Driver PCBs
- Much less wires, smaller gauge

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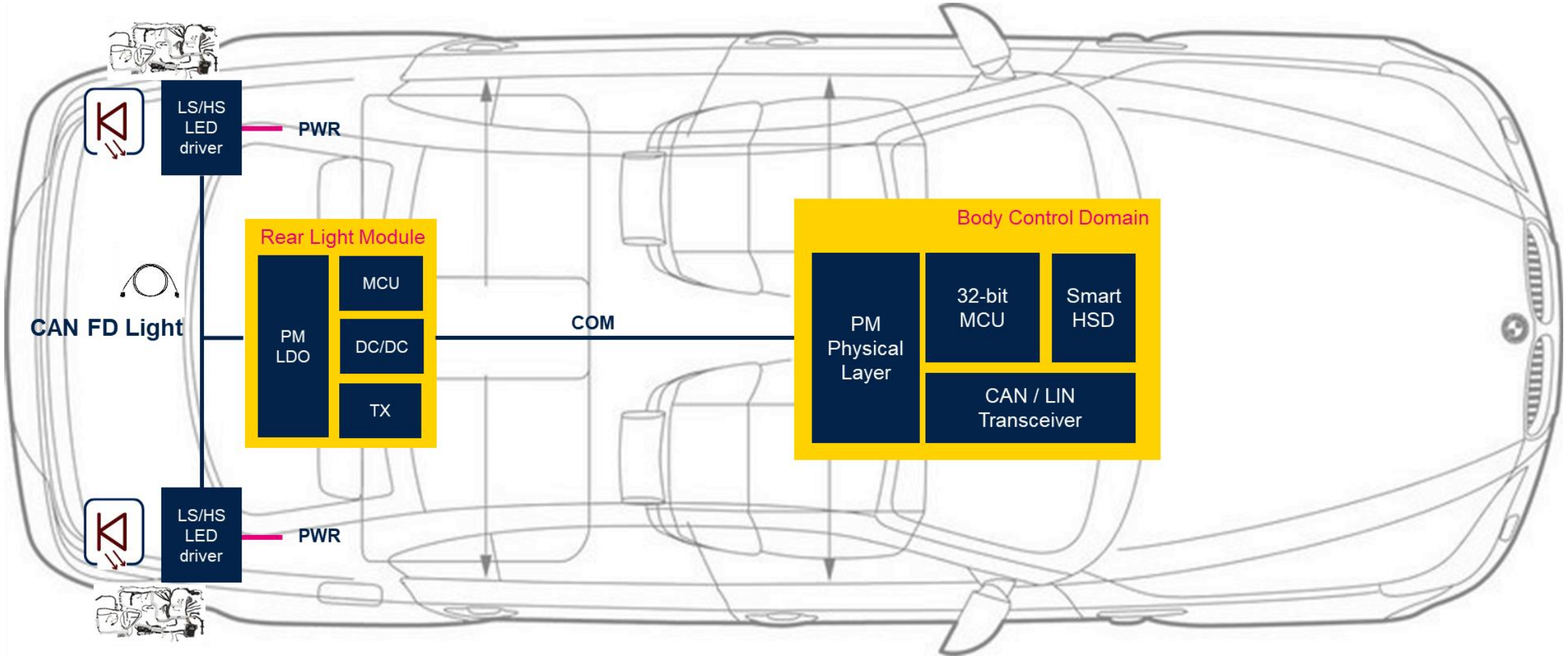
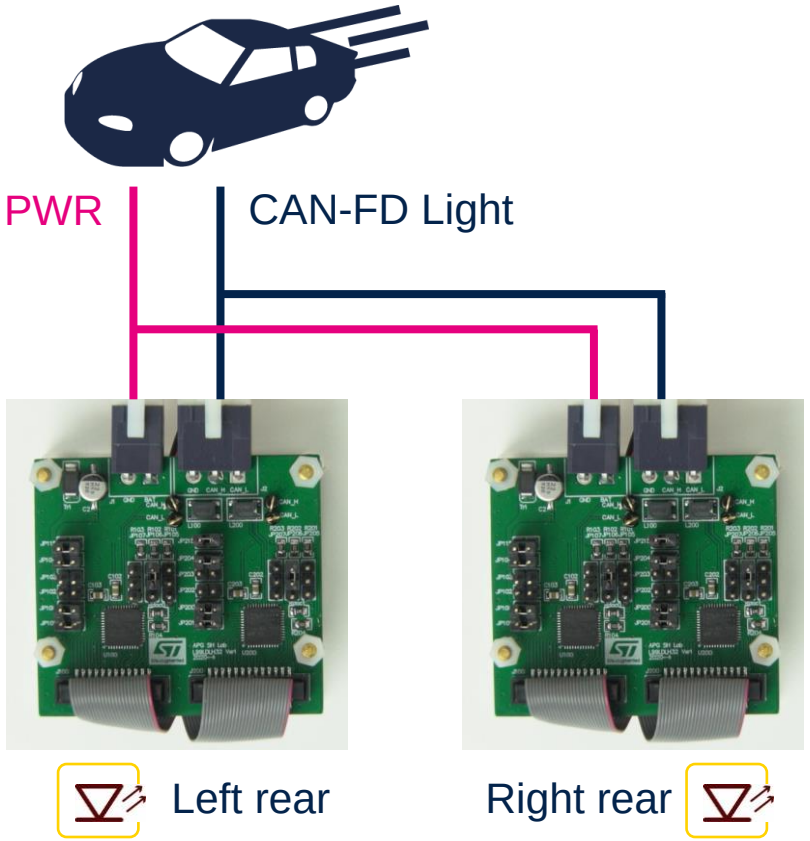
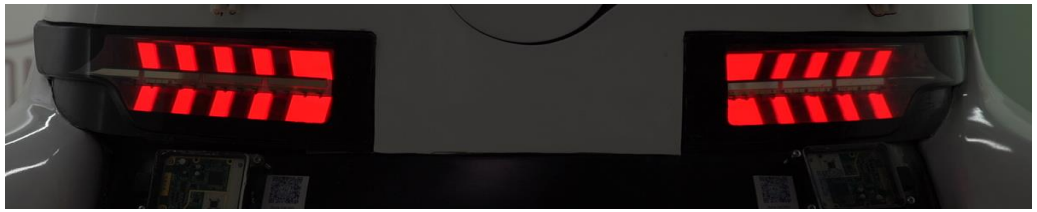
# Rear lighting: ST innovation



# Rear OLED demo




- **Short wires** : one driver board for one rear lamp.
  - 20 pcs red units and 24 white units in each OLED rear lamp
  - Red OLEDs and white OLEDs are controlled by separate L99LDLH32.
- **Independent control :** each OLED unit could be switch on/off or dimming separately, which makes more dynamic animation come true.



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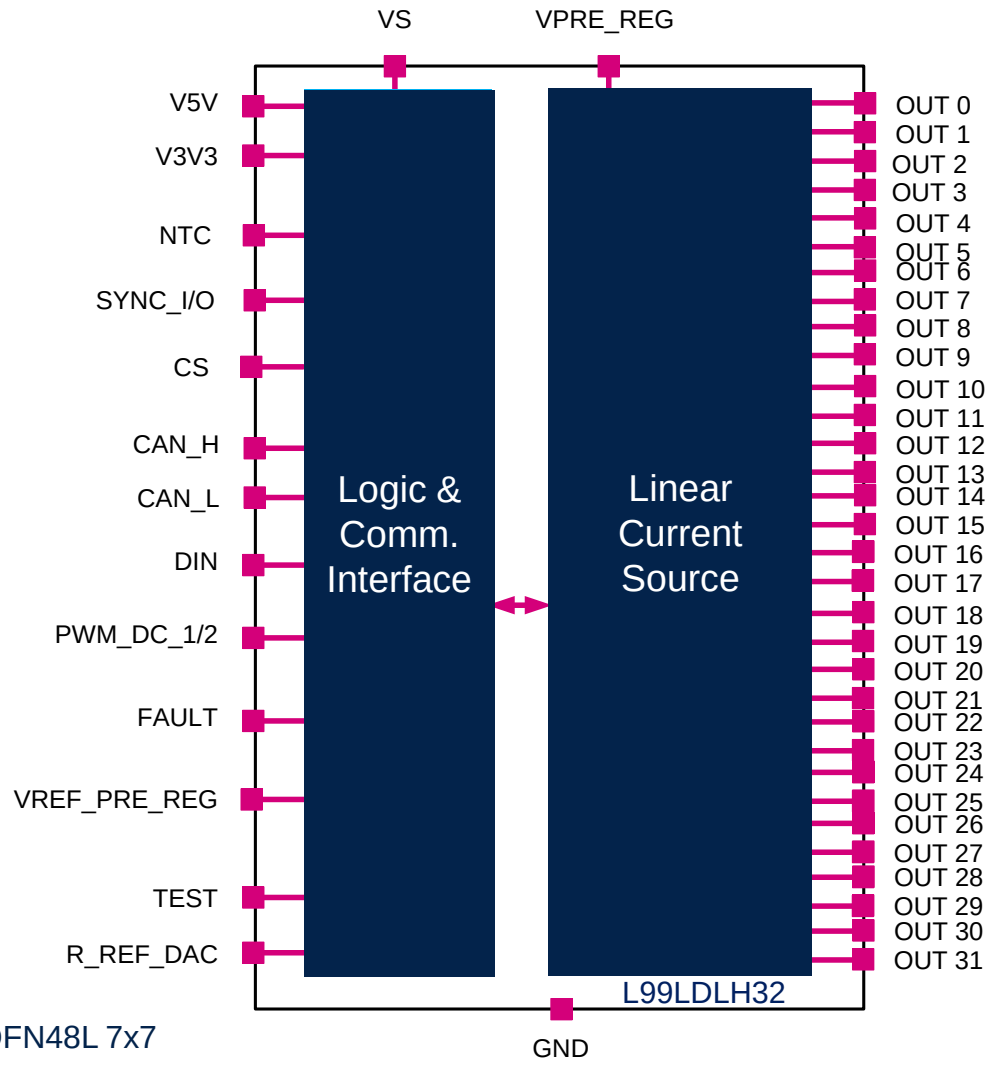
# Rear OLED demo key component high-side (O)LED driver L99LDLH32

- **Operating supply voltage range 5.5V – 38V**
- **Up to 32 channels**
  - Outputs parallelable
  - Output current: 1mA – 15mA
  - Output voltage: up to 35V
- **Current Setting per channel by 8-bit DAC**
- **Analogue and PWM dimming**
- **Bus mode operation - Serial Interface proprietary "CAN FD Light"**
  - Restricted to Rear Lamp Communication
  - Physical layer & protocol handler
  - 2kV ESD protected
  - CAN FD structure for long frames
  - 1Mbit/s baud rate
- **Integrated ADC for most flexible diagnostic**
- **Stand alone operation – integrated NVM**
- **1 Direct drive inputs for only one function group**
- **1 Fault line for diagnostic bus**
- **Thermal management**

QFN48L 7x7

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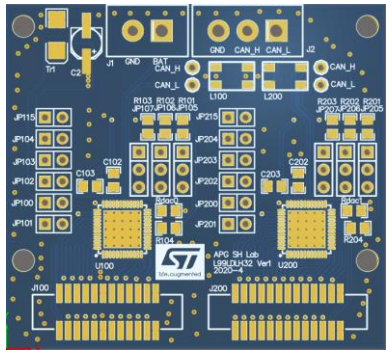
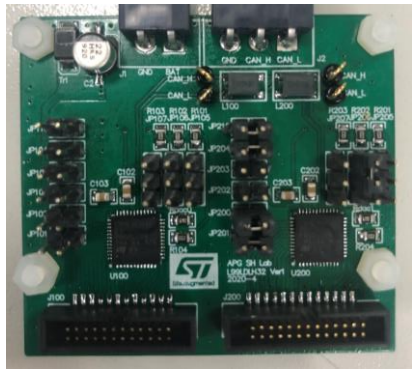
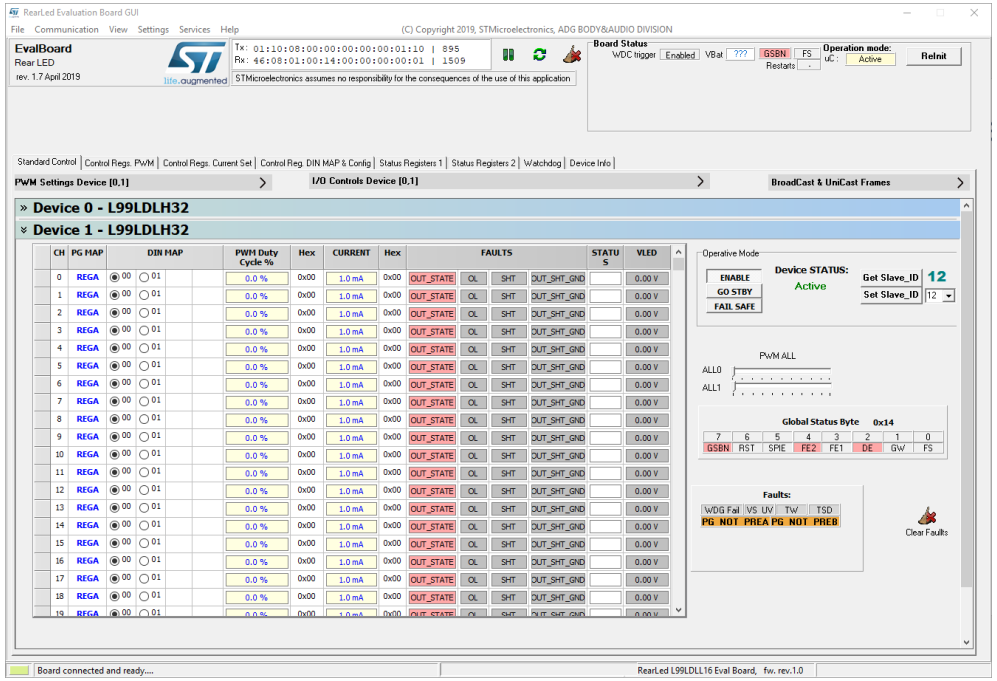
# Support package

- Databrief / Datasheet
- Application notes
- FMEDA
- Safety manual
- Evaluation board
- User GUI
  Reference code







# Thank you



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