ROHM Devices and Technologies for Current and Future Automotive Applications

ROHM’s Car Simulator Demo integrates several key devices that support different functions. Visitors can experience a number of operations, including the sequence of entering/exiting the vehicle. Smart Entry is achieved by mounting Bluetooth modules and electrostatic touch sensors in the door panels, while operating conditions during driving are shown on the instrument panel - with high resolution display made possible through built-in PMICs and LCD drivers. In addition, a display controller IC is incorporated in the center cluster display, and an LED matrix driver IC is mounted in the headlight block, providing greater functionality.
ROHM Products Used

Smart Entry

Personal authentication is carried out via smartphone when entering the car. Bringing the smartphone to the charger automatically initiates wireless charging, while at the same time the steering wheel automatically tilts to the preset position.

- Bluetooth Modules (ML7125, MK71251)
- Electrostatic Touch Controller ICs (BU21072MUV, BU21170MUV, BU21078MUV, BU21078FV, BU21079)
- Motor Driver ICs (BD169xx Series)
- Qi Compatible Wireless Charging ICs (BD57020MWV, BD57015GWL)

Information Display Through High Resolution LCD Monitor, Rear Monitor, and Side Mirrorless System

The center instrument panel displays the vehicle speed, name of the road/expressway, and proximity information of oncoming vehicles, while route navigation, rear camera view, and the pulse rate of the driver are shown on the center cluster display. In the side mirrorless monitor section, video from cameras mounted in place of the side mirrors can be viewed.

- PMIC (BM81810MUV)
- TCON (BU90AL200 / 201)
- LCD Drivers (Source, Gate) (ML9882, ML9872, ML9873)
- Display Controller ICs (ML86203, ML86240)
- Pulse Sensor (BH1790GLC-EVK-001)

ADB/Sequential Lamp

Approaching vehicles are detected and the headlamp light distribution automatically controlled and dimmed. In addition, the turn lamps are lit according to 5 sequential patterns built into the IC.

ADB (Adaptive Driving Beam): Headlamp featuring variable light distribution
Sequential Lighting: Chained lighting in which individual light sources light up in a predetermined order

- LED Matrix Driver ICs (BD18391EFV-M, BD18361EFV-M, BD18362-M)