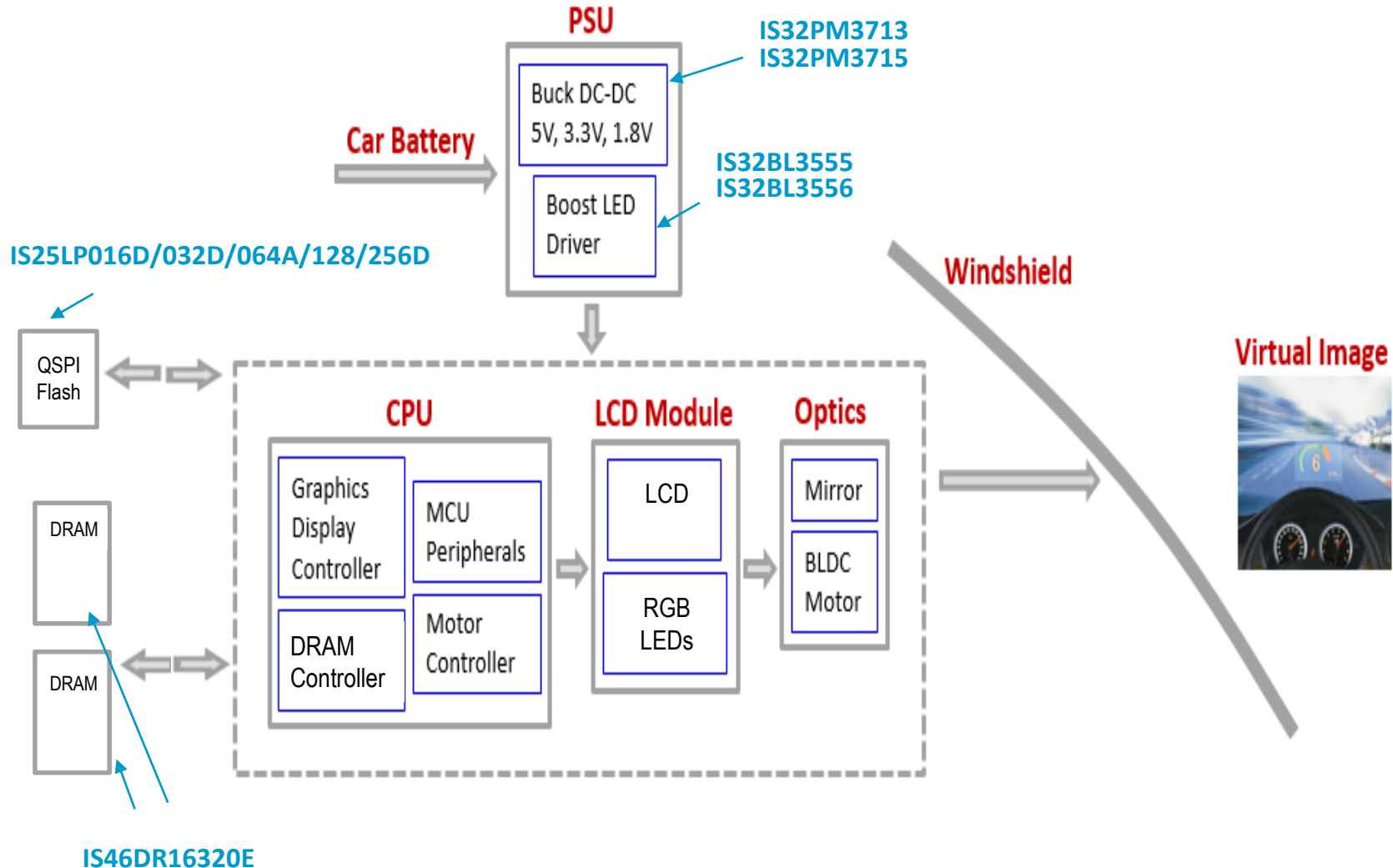


## ◀ *Application Background*

- HUD system projects driving related information onto the windshield.
- A virtual screen appears to float about a bumper distance in front of the driver and above the hood.
- White LEDs project the entire color spectrum from the image generated on an LCD to offer greater contrast range for daylight and night-view displays.
- Offered in luxury brands and vehicle models with advanced or premium package options.
- Available as built-in option or as portable aftermarket device.

## System Block Diagram



## ◀ Teardown Photos (BMW Design)

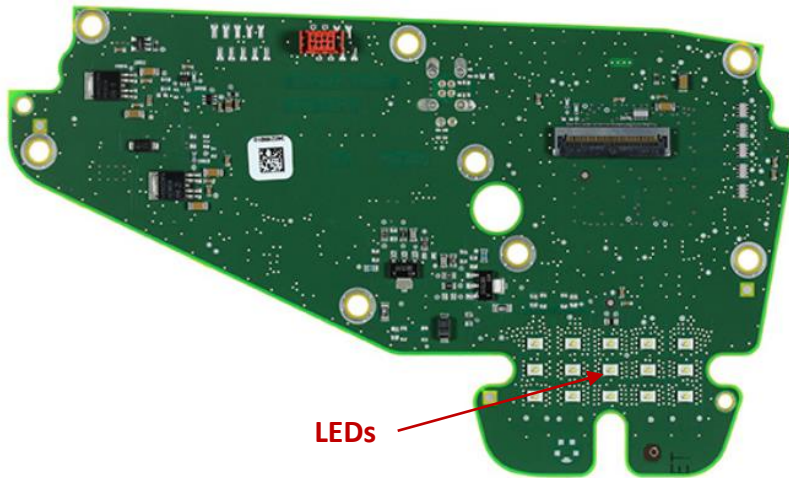
- Fully Assembled Product



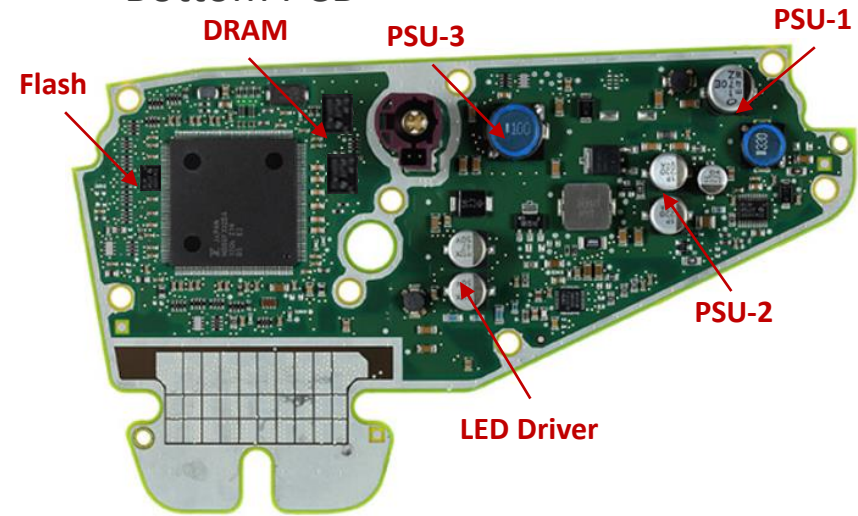
- Display Module



- Top PCB



- Bottom PCB



## ◀ *Relevant Analog Solutions*

### Boost LED Drivers

- IS32BL3555
  - 2-CH boost LED driver with 10,000:1 contrast ratio for backlighting.
  - Drives up to 2 strings of 15 LEDs each at 240mA/Channel
- IS32BL3556
  - 4-CH boost LED driver with 10,000:1 contrast ratio for backlighting.
  - Drives up to 4 Strings of 15 LEDs each at 120mA/Channel

### DC-DC Buck Regulators

- IS32PM3413
  - 3A DC-DC Buck Regulator
- IS32PM3415
  - 5A DC-DC Buck Regulator

## ◀ *Relevant Memory Solutions*

### DRAM

- IS46DR16320E
  - 1.8V 512Mbit DDR2 DRAM
  - Up to 400MHz (800MT/s data throughput per data line)
- IS46TR16128CL
  - 1.35V or 1.5V 2Gbit DDR3 DRAM
  - Up to 800MHz (1600MT/s data throughput per data line)

### SPI NOR Flash

- IS25LP064A
  - 3V, 64Mbit QSPI, 532MHz equivalent at QPI operation
- IS25LP128
  - 3V, 128Mbit QSPI, 532MHz equivalent at QPI operation