This second generation of automotive grade IGBT/SiC- EV power inverter control reference platform includes following changes:

- Standard form-factor P6 HybridDrive power module conformance to ease evaluation with the onsemi VE-Trac™ and Infineon HybridPACK™ IGBT module for example or StarPower P6 modules using Cree SiC die
- Migration from GD3100 gate driver to GD3160 allowing more efficiency and IGBT/SiC compatibility
- Adding Etherent Interface capability with THA1100
- Allowing higher output voltage up and higher power density
- System IP reduces system bill of materials (BOM) count by using a SW resolver embedded in the MCU eliminating the need for HW resolver

To ensure high levels of functional safety to protect the vehicle operator and systems like 1st generation, system level functional safety whitepaper, devices FMEDAs and safety runtime framework are part of the enablement kit for customers targeting ASIL C/D EV-Inverter implementation.

Functional safety consultation and safety software are optional add-on services available with the platform.

This platform provides a comprehensive foundation that has been validated and dyno tested for developing an IGBT inverter control system solution.

A complete Inverter control reference platform is available through Vepco Technologies Inc. It includes the four boards, IGBT module, DC link capacitor, bus bar, cooling plate, motor options, case and software.
EV-INVERTERHDBT Block Diagram

- Safety SBC
- CAN Transceiver
- MCU
- Gate Driver w/HV Isolation x6
- Software Resolver to Digital Converter
- Resolver LV/HV

Reactor

DC/DC

Link Capacitor

HV

Ignition

CAN

TJA1051T CAN Interface

TJA1100 Ethernet Interface

FS6500 System Basis Chip

MPC5775E MCU

ENET

Optional Technology

Non NXP Technology

NXP Technology

Resolver

GD3160 Gate Driver w/HV Isolation x6

SiC MOSFET x6

ENET

Resolved VO

Resolver LV/HV

Fault

Current Sense

Voltage/Temp Sense

Motor

Optional Technology

Non NXP Technology

NXP Technology

Resolver

EV-INVERTERHD Block Diagram

- Safety SBC
- CAN Transceiver
- MCU
- Gate Driver w/HV Isolation x6
- Software Resolver to Digital Converter
- Resolver LV/HV

Reactor

DC/DC

Link Capacitor

HV

Ignition

CAN

TJA1051T CAN Interface

TJA1100 Ethernet Interface

FS6500 System Basis Chip

MPC5775E MCU

ENET

Optional Technology

Non NXP Technology

NXP Technology

Resolver

GD3160 Gate Driver w/HV Isolation x6

SiC MOSFET x6

ENET

Resolved VO

Resolver LV/HV

Fault

Current Sense

Voltage/Temp Sense

Motor

Optional Technology

Non NXP Technology

NXP Technology

Resolver

Resolver

Resolver
View additional information for **EV Power Inverter Control Reference Platform Gen 2**.

**Note:** The information on this document is subject to change without notice.