Manual for Evaluation Tools

Evaluation Tools for HybridPACK™ Drive G2 Power Modules

About this document

This application note provides a comprehensive overview of the evaluation tools for HybridPACK™ Drive G2 power modules, which are available with IGBT/Diode, SiC MOSFET, and Si/SiC FUSION chipsets. The document includes a detailed description of the evaluation tools, interfaces, and connectors, as well as a quick-start guide manual for common measurements.

Scope and purpose

The evaluation tools are designed to support customers in their initial design stages when working with HybridPACK™ Drive G2, EiceDriver™, Xensiv™and Aurix™ uControllers. These tools are not intended to provide an optimal design for specific requirements, but rather serve as a starting point and offer valuable design insights for serial development. Additionally, they enable practical experience with power module switching characteristics, gate driver features, and phase current sensor performance tests in a laboratory setting with minimal effort.

Important: Before proceeding, it is essential to read and understand the safety warnings outlined in section 1.1.

Intended audience

This document is intended for experienced engineers who design power electronics systems and gate drive boards for HybridPACK™ Drive G2 power modules.

Table of Contents

1 Introduction

The Evaluation Tools for HybridPACK™ Drive G2 power modules are designed to support engineers throughout their design-in activities. The tools feature open design files, making it convenient to conduct evaluations and cross-reference tests.
Please note that it is essential to read and understand the manual, as well as the safety warnings outlined in Section 1.1, before proceeding.

1.1 Safety Warning for Evaluation Kit

The design operates with unprotected high voltages. Therefore, the Evaluation Tools may only be handled by persons with sufficient electrical engineering training and experience. The customer assumes all responsibility and liability for its correct handling and/or use of the Evaluation Kit and undertakes to indemnify and hold Infineon Technologies harmless from any third party claim in connection with or arising out of the use and/or handling of the Evaluation Kit by the customer.
The Evaluation Kit is a sample to be used by the customer solely for the purpose of evaluation and testing. It is not a commercialized product and shall not be used for series production. The Evaluation Kit is thus not intended to meet any automotive qualifications. Due to the purpose of the system, it is not subjected to the same procedures regarding Returned Material Analysis (RMA), Process Change Notification (PCN) and Product Withdraw (PWD) as regular products. See Legal Disclaimer and Warnings for further restrictions on Infineon Technologies warranty and liability.
European legislation in relation to inter alia the restriction of hazardous substances (RoHS), waste from electrical and electronic equipment (WEEE), electromagnetic compatibility, as well as duties to comply with CE, FCC or UL standards do not apply to the Evaluation Kit and the Evaluation Kit may not fulfill such requirements.

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1.2 Information Export Control Classification

The evaluation tools with the following product names are general purpose power electronics tools. They come without software/firmware.

- EV GB * (Gate driver boards)
- EV PCB * (any support PCB like adapters)
- EV LB * (Logicboard)

Table 1 Export control relevant performance data of the evaluation kit

Question	Answer	Detailed Information
Multiphase output providing a power of 40VA or greater	NO	The gate driver, logicboard and adapter PCBs cannot output 40VA or greater over a longer time period (< milliseconds).
Operating at a frequency of 600 Hz or more	NO	The gate driver and adapter PCBs do not include any control (NO).
	YES	Only for "**EV LB ***": The logicboards can be programmed to operate at 600 Hz or more
Frequcy control better (less) than 0.2%	NO	The gate driver and adapter PCBs do not include any control (NO).
	YES	Only for "**EV LB ***": The logicboard uses a digital control with Aurix™ Microcontroller. The Microcontroller clock is generated from a standard off-the-shelf crystal with a typical frequency tolerance of +/-15ppm at room temperature and additional +/-25ppm over the operating temperature.

2 Overview Evaluation Tools and Order Numbers

The shown Evaluation Tools depicted in Figure 1 are supplied without software, cooler, DC-link capacitor, and other components. For a comprehensive full inverter evaluation kit, please see Quickstart Guide for Inverter Evaluation Kit (AN-G2-KITQUICKSTART) [3].

The Evaluation Tools can be orderd through your local Infineon sales representative using the corresponding SP order number.

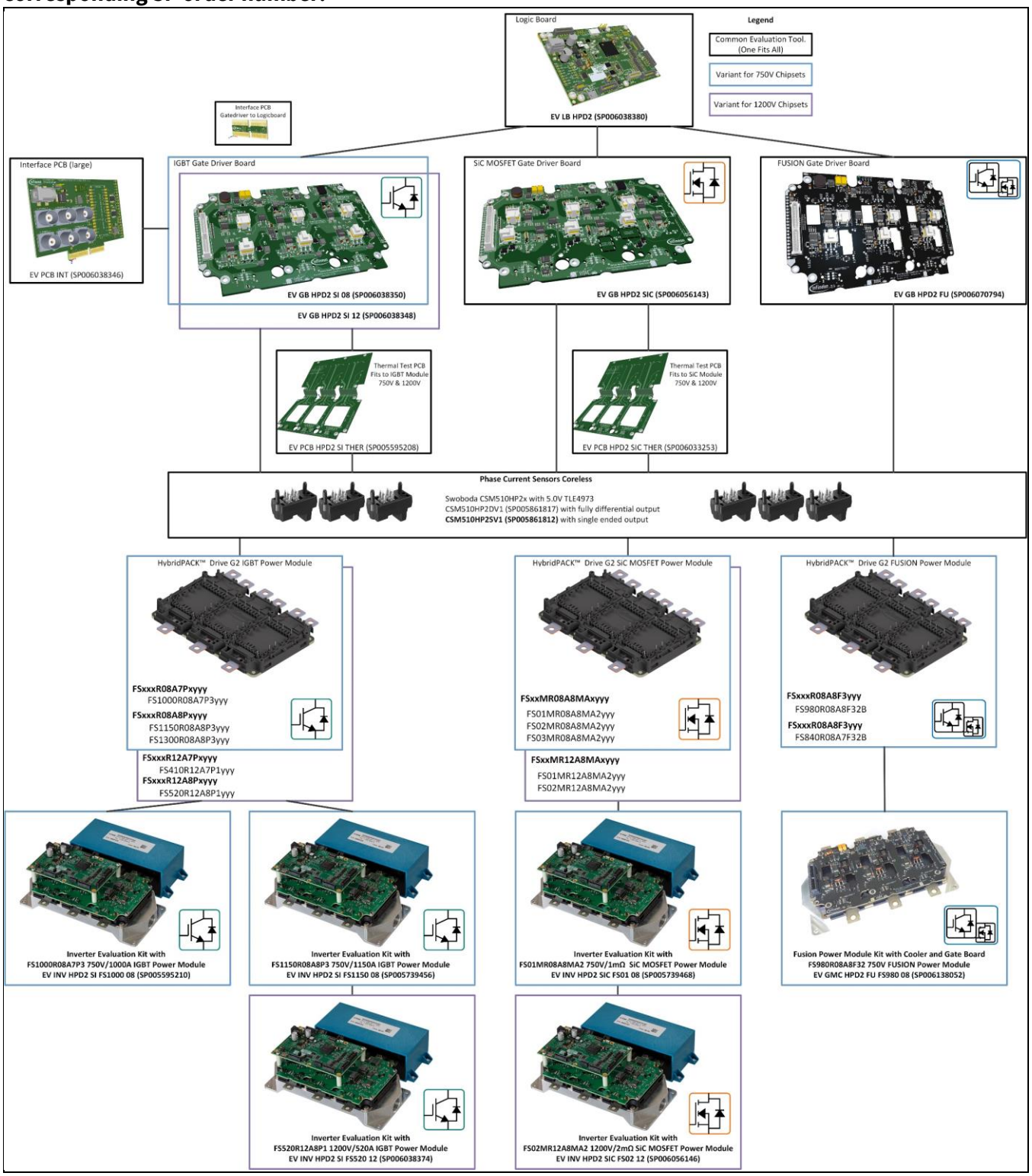

Figure 1 Overview Evaluation Tools for HybridPACK™ Drive G2 Power modules. See also Table 2

Overview Evaluation Tools and Order Numbers

Please note that only the power modules, phase current sensors and gate drivers are regular products. All printed circuit boards (PCB) populated and unpopulated are for evaluation purpose in the lab.

Table 2 Overview Evaluation Tools for HybridPACK™ Drive G2 power modules

Type	Short description	SP Order No	Order Name
Logic Board “all in one”	Logicboard with Aurix 2G TC3x7 for HybridPACK™ Drive G2 Evaluation Tools.	SP006038380	EV LB HPD2
Gate Driver Board IGBT 750V	Gate Driver Board with 1EDI3025AS gate drivers for HybridPACK™ Drive G2 modules with 750V EDT3 IGBT Chipset	SP006038350	EV GB HPD2 SI 08
Gate Driver Board IGBT 1200V	Gate Driver Board with 1EDI3025AS gate drivers for HybridPACK™ Drive G2 modules with 1200V EDT IGBT Chipset	SP006038348	EV GB HPD2 SI 12
Gate Driver Board SiC MOSFET 750V & 1200V	Gate Driver Board with 1EDI3035AS gate drivers for HybridPACK™ Drive G2 modules with Automotive Gen2 SiC MOSFET chipset. The board can be used for both 750V and 1200V chipsets.	SP006056143	EV GB HPD2 SIC
Gate Driver Board FUSION	Gate Driver Board with 1EDI3035AS gate drivers for HybridPACK™ Drive G2 FUSION power modules. FUSION: IGBT & SiC MOSFET chipset. The PCB has cutouts implemented for thermal IR measurements on blacked modules.	SP006070794	EV GB HPD2 FU
Interface PCB (large)	Interface PCB for double pulse tests without logicboard.	SP006038346	EV PCB INT
Rigid Flex PCB (IGBT Version)	Rigid Flex Adapter PCB for IR thermal measurement on blackened IGBT module. PCB is not populated, only adapter from IGBT power module to gate driver boards	SP005595208	EV PCB HPD2 SI THER
Rigid Flex PCB (SiC MOSFET Version)	Rigid Flex Adapter PCB for IR thermal measurement on blackened SiC module. PCB is not populated, only adapter from SiC power module to gate driver boards	SP006033253	EV PCB HPD2 SIC THER
Phase Current Sensor 5.0V Single Ended	Swoboda Phase Current Sensor with 5.0V TLE4973	SP005861812	CSM510HP2SV1
Phase Current Sensor 5.0V Differential Ended	Swoboda Phase Current Sensor with 5.0V TLE4973	SP005861817	CSM510HP2DV1

2.1 Type designation tree for evaluation tools

The product order names of the evaluation tools were changed in Jan 2024 in order to support a comprehensive type designation tree for the available evaluation tools. The structure of the new naming is shown in the figure followed by some examples.

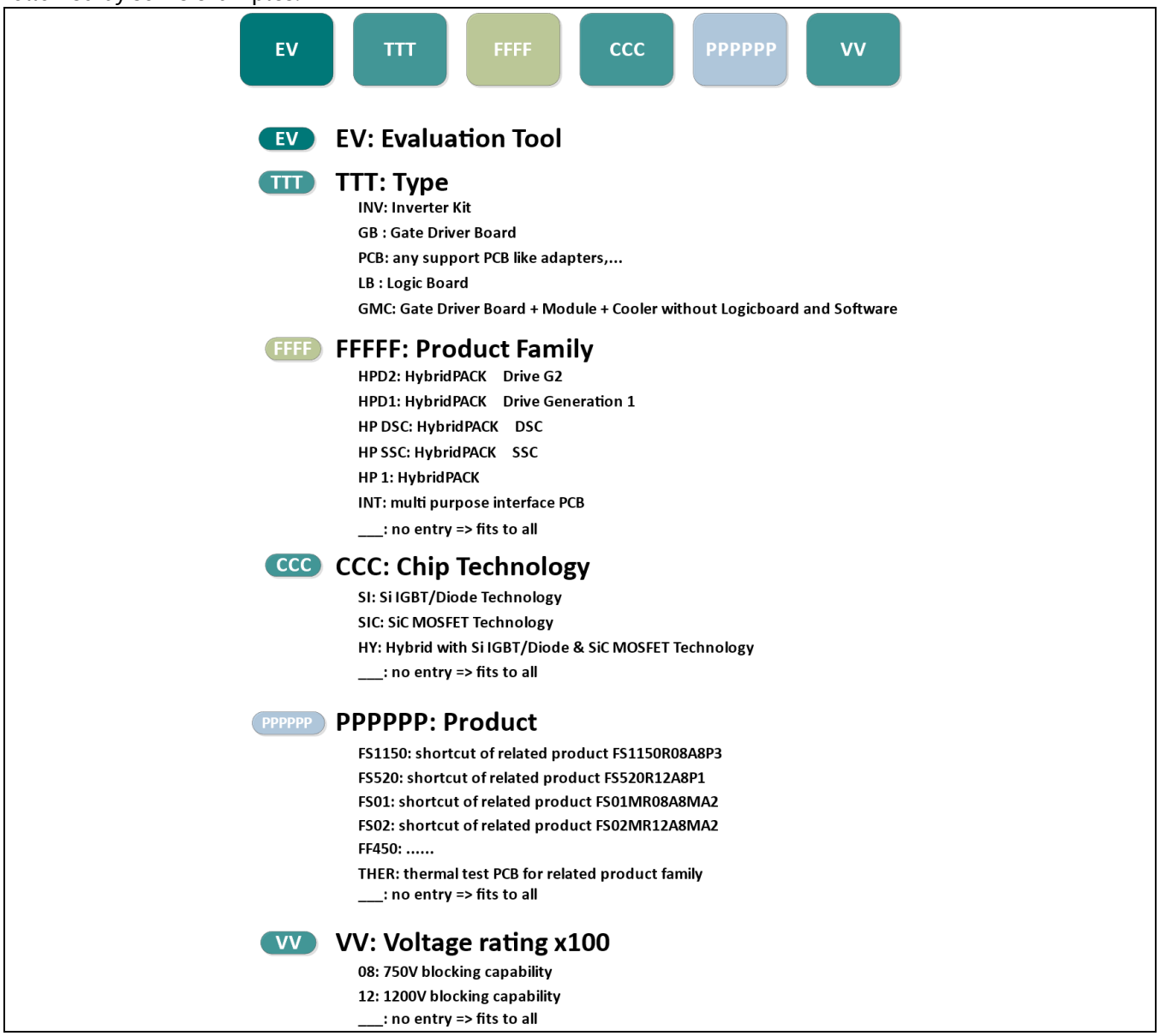

Figure 2 Type designation tree for the HybridPACK™ power module evaluation tools.

Some Examples:

EV GB HPD2 SIC: Evaluation Kit - Gate Drive board for HybridPACK™ Drive G2 750V & 1200V SiC power module with 1EDI3035AS gate driver.

EV GB HPD2 SI 08: Evaluation Kit - Gate Drive board for HybridPACK™ Drive G2 750V IGBT power module with 1EDI3025AS gate driver.

2.2 Key Components

Table 3 Key Components of the Evaluation Tools

Type	Description	In Evaluation Tool
1EDI3025AS	Automotive EiceDRIVER™ for IGBT power modules	EV GB HPD2 SI *
1EDI3035AS	Automotive EiceDRIVER™ for SiC MOSFET power modules and for FUSION power modules	EV GB HPD2 SIC * EV GB HPD2 FU *
TLE4973-AE35S5	XENSIV™ magnetic coreless current sensor for power module phase current sensor	Swoboda CSM510HP2x Compatible with all EV GB HPD2 *
TLE8386-2EL	Boost DCDC Controller	EV GB HPD2 *
AUIR2085S	Self Oscillating 50% Duty Cycle Half Bridge Driver	EV GB HPD2 *
SAK-TC387QP-160F300S	Aurix 2G Microcontroller	EV LB HPD2 Logic Board 4.2x and 5.x

2.3 Recommended Lab Equipment

For evaluation following lab equipment is recommended:

- Low voltage power supply 20 V, 2 A, 25 W (typical 14V).
- CAN card. Recommended “Peak CAN USB” (PCAN USB opto) [4].
- High Voltage power supply (see Table 4)
- Oscilloscope & current probes depending on loads

2.4 Recommended Operating Conditions

The recommended operating conditions outlined below describe the targeted laboratory testing environment. While testing beyond these parameters may be possible in specific cases, provided that all individual components are operated within their specified limits, it is essential to note that the evaluation gate driver board and power module should not be regarded as a protected system. This setup is not intended for end customers, but rather serves as a development tool to support engineers in their initial design efforts with Infineon EiceDRIVER™ gate drivers, XENSIV™ magnetic coreless current sensor, and HybridPACK™ power modules. For a comprehensive understanding of the limitations, please refer to sections 1.1 and 2.5.

Table 4 Operating Conditions

Type	Symb	Min	Typ	Max	Conditions
12V Board Supply	12V_IN_LV	10 V	14 V	18 V	Power supply has to deliver up to 25 W. Isolated power supply recommended to avoid GND loops with measurement equipment
HV Working Voltage (Capacitor DC-Link Voltage)	VDClink_HV	0 V		500 V (for 750 V chipsets) 850 V (for 1200 V chipsets)	For double pulse tests <250mA For inductive dummy loads typ up to 30kW (depending on load tests) For inverter operation up to 300kW (depending on load tests)
Ambient Temperature	T_{amb}	-40°C		85°C	>85°C not recommended
Coolant Fluid Temperatuire	T_F	-40°C		85°C	Typical flowrate 10L/min with 50%/50% Water/Ethylenglycol
Switching frequency	f_{sw}		10 kHz	20 kHz	For short term operation >20 kHz is possible. Please apply appropriate cooling to the gate driver boards.

2.5 Limitations of the Evaluation Tools

The gate driver board with the power module is not a protected system and should not be treated as such. It was designed for evaluation purposes under laboratory conditions, with minimal automatic shutdown routines, to allow for testing under extreme conditions where protection mechanisms might otherwise limit the evaluation possibilities. The evaluation gate driver board is not protected against:

- Overvoltage and undervoltage conditions on the signal connectors.
- Overvoltages conditions on the 12V board supply voltage.
- Overvoltages conditions on the high-voltage (HV) working voltage.
- Overtemperature conditions affecting the printed circuit board (PCB) and module.
- High switching frequencies, which may require active cooling of the gate driver board, particularly at high ambient temperatures.
- For short circuit testing, please refer to [2] for more detailed information.

Please note that this list is not exhaustive and is intended to provide examples of potential hazards rather than a comprehensive list of all possible risks.

3 Interface Descriptions

3.1 Interfaces Gate Driver Boards (IGBT Versions EV GB HPD2 SI)

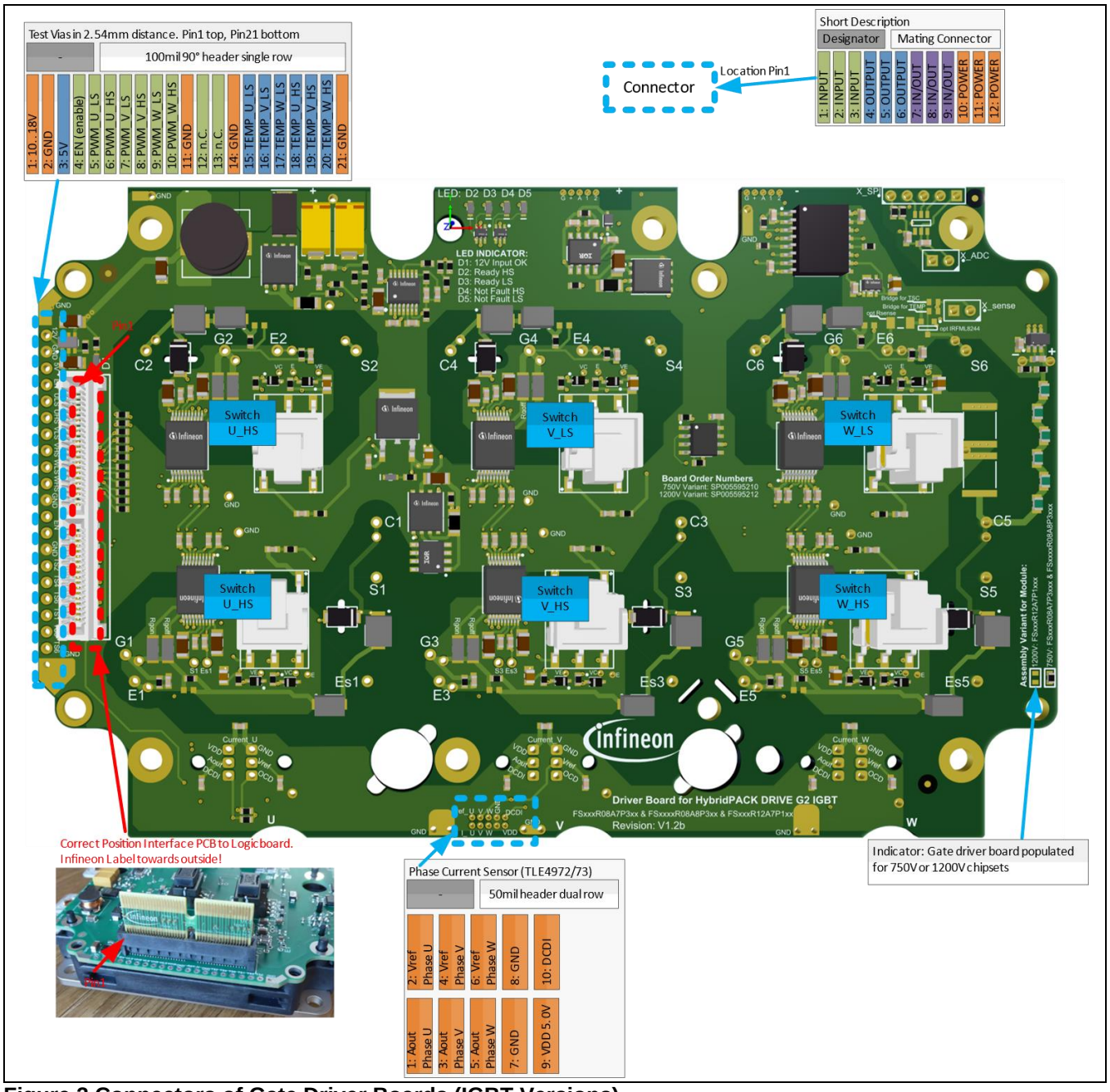

Figure 3 Connectors of Gate Driver Boards (IGBT Versions).

3.2 Interfaces Gate Driver Boards (SiC MOSFET Versions EV GB HPD2 SIC)

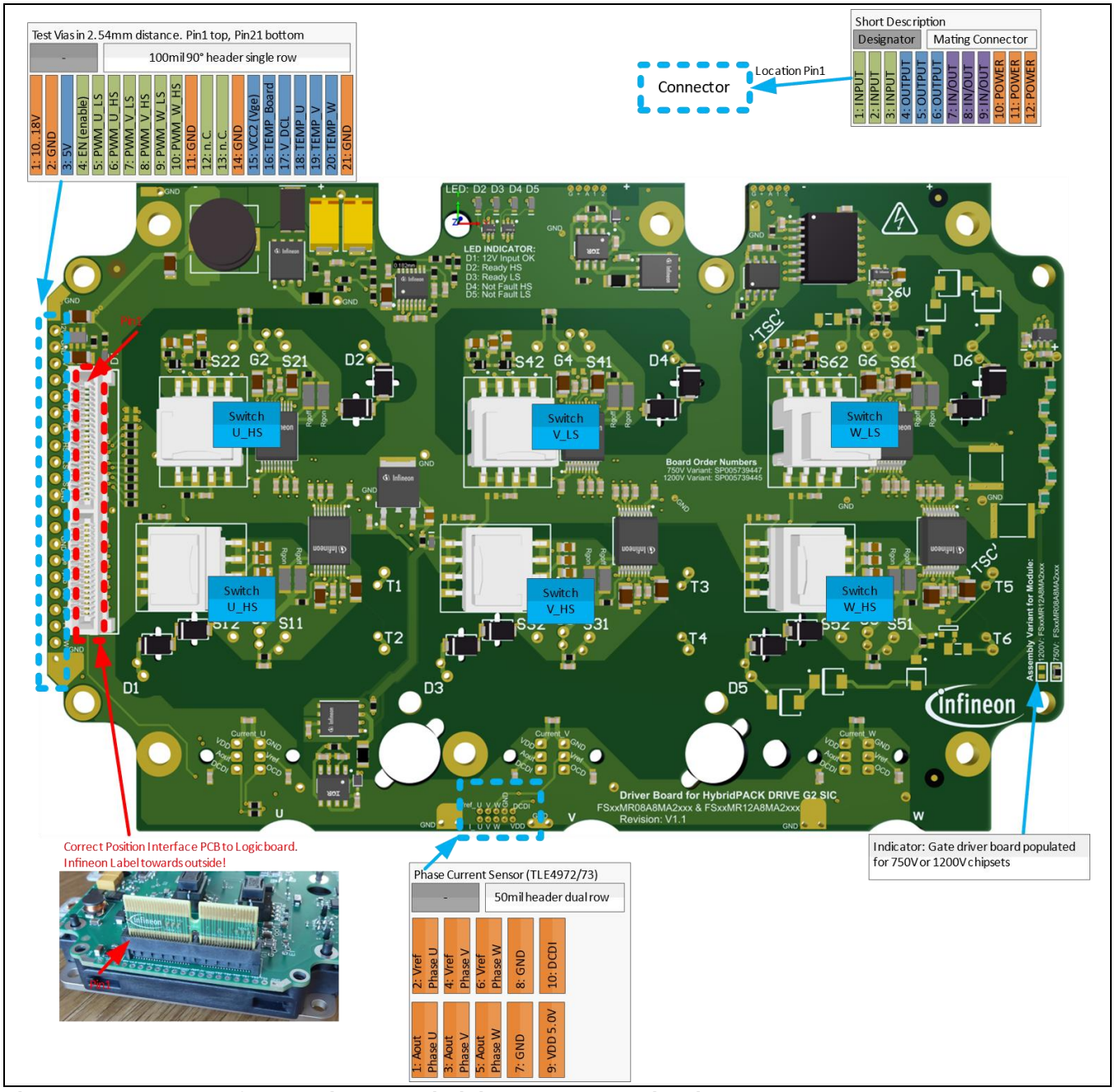

Figure 4 Connectors of Gate Driver Boards (SiC MOSFET Versions).

3.3 Interfaces Gate Driver Boards (FUSION Versions EV GB HPD2 FU)

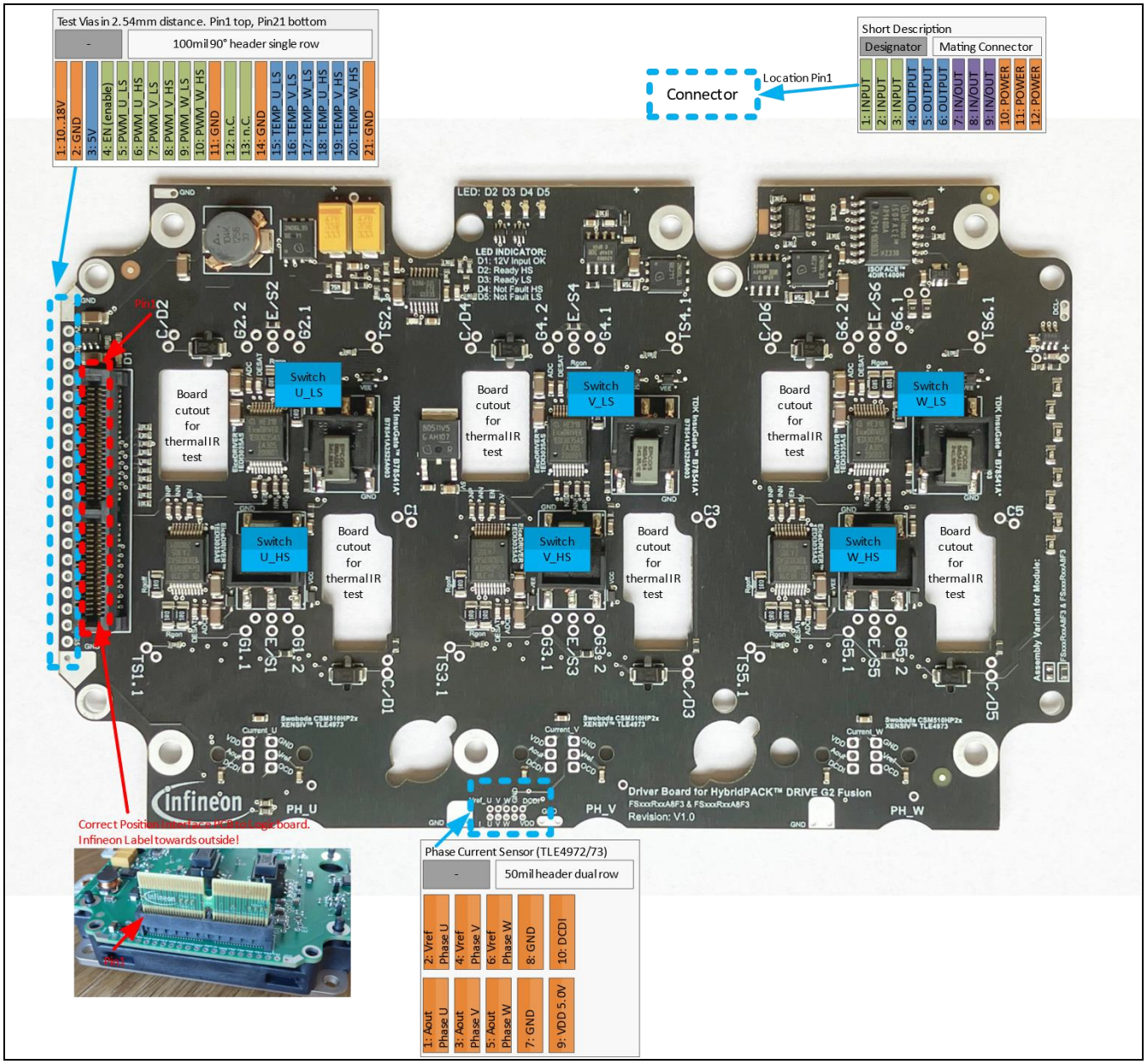

Figure 5 Connectors of Gate Driver Boards (FUSION Versions).

3.4 Interfaces Logic Board (EV LB HPD2)

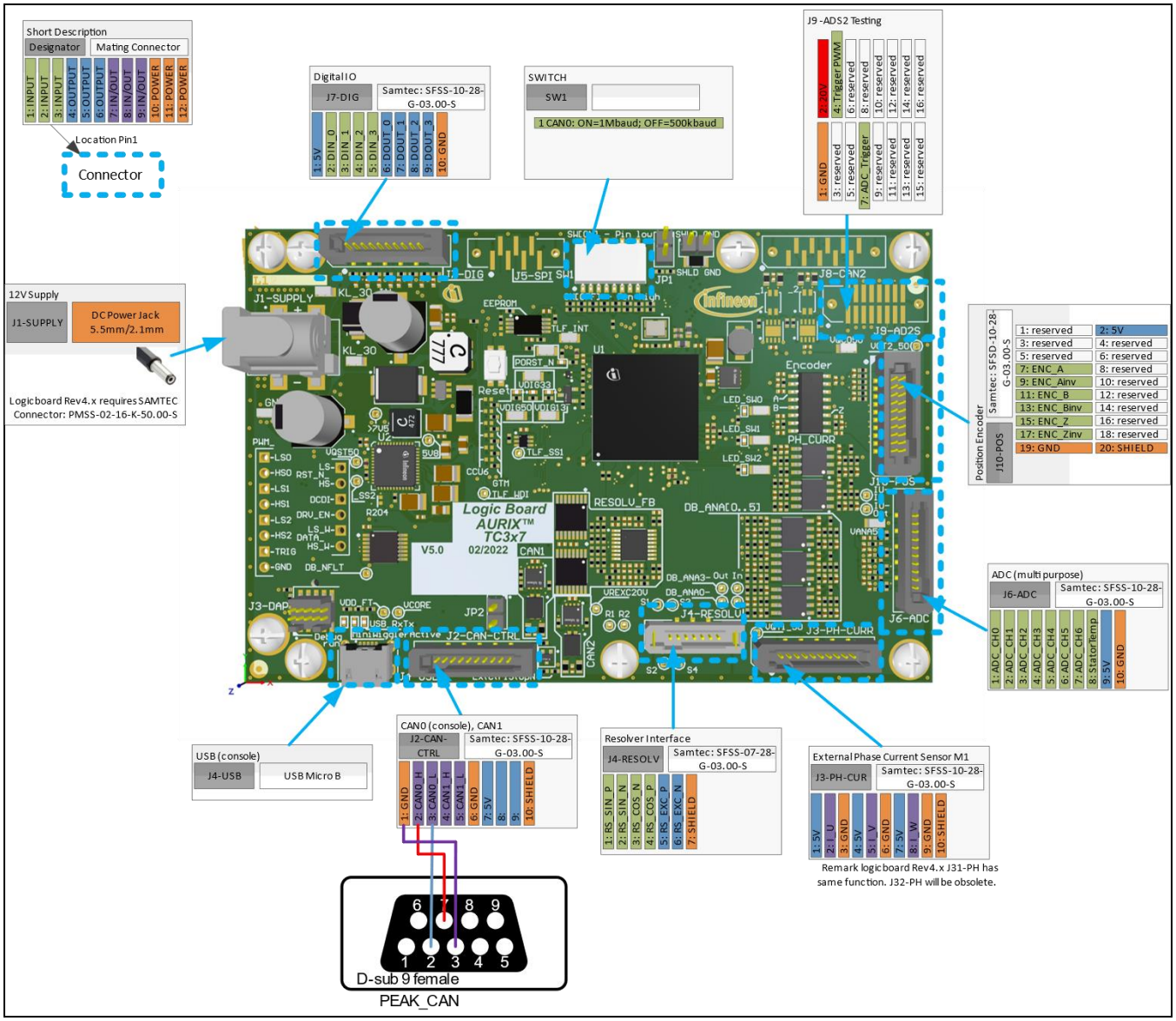

Figure 6 Connectors of Logicboard LB5.x (LB4.x see remarks).

3.5 Interface 80pin Board to Board Connector (Detailed Signal Description)

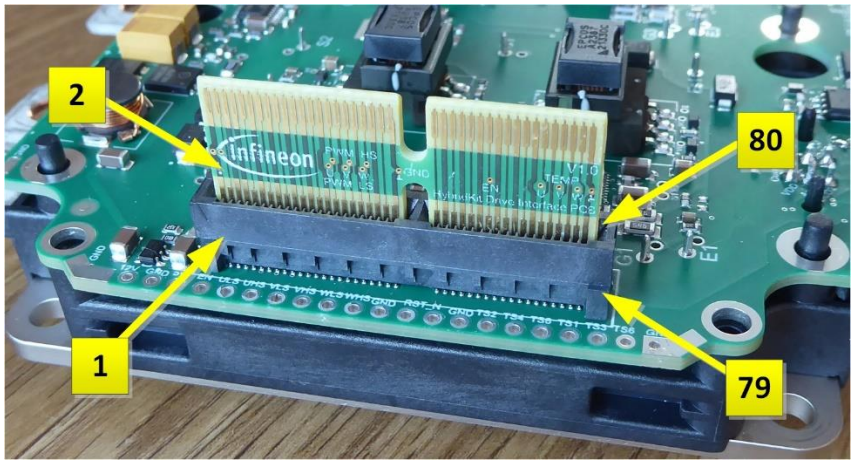

Table 5 Board to Board Connector (*pin number in view of the gate driver board. Please note that pin numbers are flipped for logicboard)

Pin no*	Symbol	Direction	Voltage	Current	Description
1; 5	12V_IN_LV	Input	10..18V	< 2A	Gate driver board supply voltage. The gate driver board has a DCDC regulator implemented to stabilize the supply voltage.
2; 6; 7; 8; 11; 12; 15; 16; 19;20; 23; 24; 27; 28; 31; 32; 35; 36; 39;40; 43; 44; 47; 48; 51; 52; 55; 56; 59; 60; 63; 64; 67; 68; 71; 72; 75; 76; 79; 80	GND_LV	GND	GND	GND	Ground
3	NC_X1_3	N.C.	N.C.		Not connected
4	5V_SENSE_LV	Input	5V		5V supply input for the phase current sensors
9	I_U	Output	0..5V		Analog output of phase current sensor (Aout of TLE4973). Phase U
10	V_ref_U	Output	0..5V		Analog output of reference voltage of phase current sensor (Vref of TLE4973). Phase U
13	I_V	Output	0..5V		Analog output of phase current sensor (Aout of TLE4973). Phase V
14	V_ref_V	Output	0..5V		Analog output of reference voltage of phase current sensor (Vref of TLE4973). Phase V
17	I_W	Output	0..5V		Analog output of phase current sensor (Aout of TLE4973). Phase W
18	V_ref_W	Output	0..5V		Analog output of reference voltage of phase current sensor (Vref of TLE4973). Phase W
21	RDY_HS	Output	0..5V		Ready signal. 5V indicate ready of highside gate drivers (SYS 1, 3, 5).
22	RDY_LS	Output	0..5V		Ready signal. 5V indicate ready of lowside gate drivers (SYS 2, 4, 6)
25	nFLT_HS	Output	0..5V		Not Fault signal. 5V indicate OK status of highside gate drivers (SYS 1, 3, 5).
26	nFLT_LS	Output	0..5V		Not Fault signal. 5V indicate OK status of lowside gate drivers (SYS 2, 4, 6)
29	PWM_HS_U	Input	0..5V		PWM input for Phase U Highside (SYS 1). 5V switch on.
30	PWM_LS_U	Input	0..5V		PWM input for Phase U Lowside (SYS 2). 5V switch on.
33	PWM_HS_V	Input	0..5V		PWM input for Phase V Highside (SYS 3). 5V switch on.
34	PWM_LS_V	Input	0..5V		PWM input for Phase V Lowside (SYS 4). 5V switch on.
37	PWM_HS_W	Input	0..5V		PWM input for Phase W Highside (SYS 5). 5V switch on.
38	PWM_LS_W	Input	0..5V		PWM input for Phase W Lowside (SYS 6). 5V switch on.
41	NC_nRST_HS	Input	0..5V		Not connected. Obsolete for 1EDI3025/35AS gate drivers. Rising edge on EN (SI1|SI2) clears errors.

42	NC_nRST_LS	Input	0..5V		Not connected. Obsolete for 1EDI3025/35AS gate drivers. Rising edge on EN (SI1|SI2) clears errors.
45	NC_X1_45	N.C.	N.C.		Not connected
46	NC_X1_46	N.C.	N.C.		Not connected
49	DCDI	In/Output	0..5V		DCDI UART communication of TLE4973 Sensors
50	OCD	Output	0..5V		OCD Over current detection from phase current sensor. 0V indicate overcurrent (wired OR).
53	ADUM_EN	Input	0..5V		Enable operation of isolated DC Link voltage measurement. 5V activates SPI communication to the isolated ADC.
54	5V_SENS_LV	Output	0..5V		Supply voltage of the phase current sensors
57	EN	Input	0..5V		Enable signal for gate drivers. 5V activates the input logic of the gate drivers. The rising edge clears errors. The EN is connected to gate driver SI1 and SI2 pins which are shorted in the evaluation kits. The SI1|SI2 safety input pins behave in such configuration similar to Enable/Reset pins.
58	DATA_LS_U	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver lowside phase U. Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with gate driver positive supply voltage.
61	NCS_EEPROM	Input	0..5V		SPI Communication. Chip select signal for EEPROM. Active Low. For communication with EEPROM set “ADUM_EN” signal to low. EEPROM communication only possible when isolated DCL voltage measurement disabled.
62	DATA_LS_V	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver lowside phase V. Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with board temperature.
65	SDI	Input	0..5V		SPI Communication Serial data input. Used by EEPROM
66	DATA_LS_W	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver lowside phase W. Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with HV dc working voltage.
69	SDO	Output	0..5V		SPI Communication Serial data output. Used by EEPROM and for isolated DCL voltage measurement
70	DATA_HS_U	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver highside phase U. Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with on substrate temperature sensor.
73	SCLK	Input	0..5V		SPI Communication Serial Clock. Used for EEPROM and for isolated DCL voltage measurement
74	DATA_HS_V	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver highside phase V. Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with on substrate temperature sensor.
77	CS_N	Input	0..5V		SPI Communication. Chip select signal for isolated DCL voltage measurement. Active Low. ADC is sampled on falling edge of chip select
78	DATA_HS_W	Output	0..5V		The data pin is used for ADC (duty cycle <50%) and diagnosis data (duty cycle > 50%) of the gate driver highside phase W.

					Gate Driver used with IGBT power module: The ADC signal correlates with Temperature of the IGBT. Gate Driver used with SiC MOSFET power module: The ADC signal correlates with on substrate temperature sensor.

3.6 Interfaces Interface PCB (EV PCB INT)

The interface PCB is a convenient and versatile component that is compatible with various gate driver boards of the HybridPACK Drive G2 power modules. It is particularly well-suited for simple double pulse testing and similar applications. To support research and academic studies, the interface boards also feature a footprint that allows for the attachment of open source Arduino Nano boards. Specifically, the Arduino Nano 33 IoT has been tested and proven to be a powerful yet user-friendly tool for pulse testing and open-loop inverter operation. For more complex tasks please refer to the logicboards with the powerful Infineon Aurix Microcontrollers.

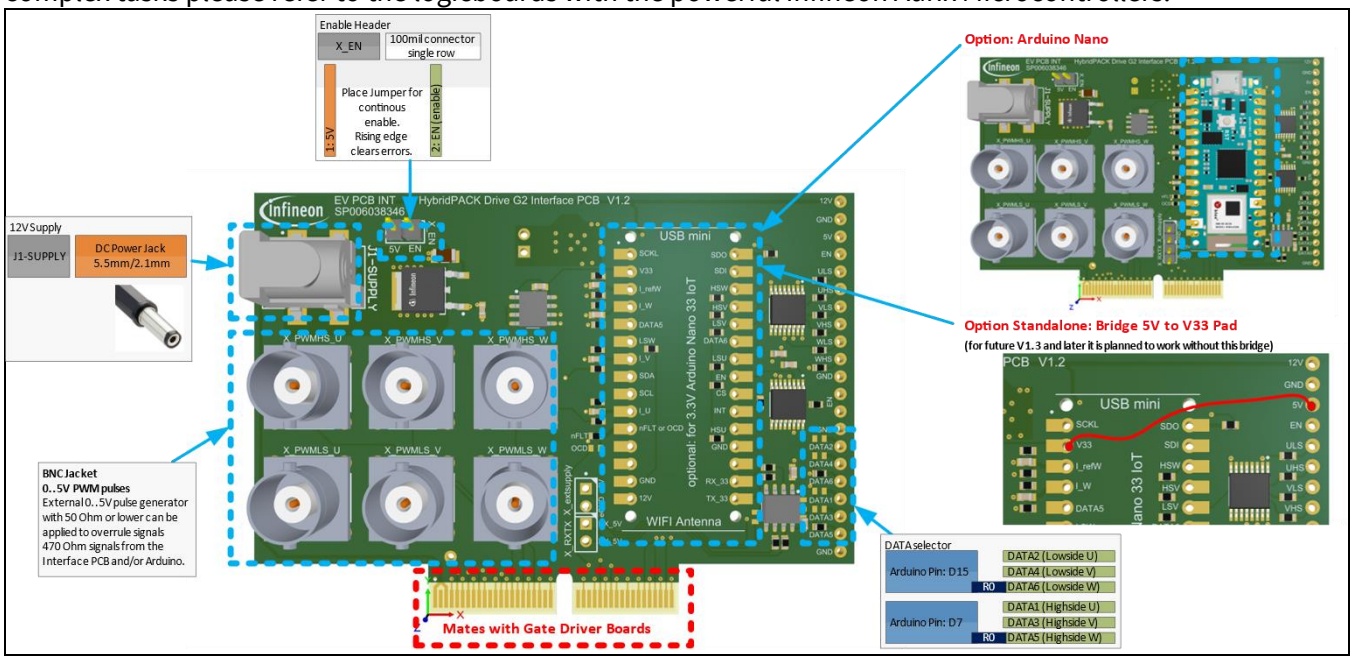

Figure 7 Connectors of Interface PCB (large). This PCB is a usefull interface card if the gate drivers are controlled from external logic.

3.6.1 Operation from external pulse generator via BNC jackets

The interface PCBs offer a convenient method for applying signals from external pulse generators to the gate driver boards. To operate in this mode, follow the sequence outlined below:

Before initiating this mode, ensure that a bridge (or a resistor of up to 10 kΩ) is connected from 5V to the V33 pin (refer to Figure 7 for details). Note that for future revisions (V1.3 and later), this step is planned to be eliminated.

After this preparation, follow these steps:

- Connect the interface PCB to the gate driver board connector.
- Power the interface PCB using the 5.5mm DC power jack. A 12 V, 25 W power supply is recommended.
- After powering up, place a jumper on the Enable Header to reset the gate drivers and enable their operation. This will cause all status LEDs on the gate driver boards to illuminate.
- PWM signals with a 0-5V level can be fed into the BNC connectors. The external pulse generator should have an output impedance of 50 Ω or less.

3.6.2 Operation with Arduino Nano boards

The following table provides a starting guide for creating simple programs using the open-source Arduino Nano platform. When operating evaluation tools with high-voltage supplies, please ensure that proper safety measures are taken.
It is recommended to avoid using USB connections (except for programming), as they tend to malfunction under high switching speeds of IGBT, SiC MOSFET, or Fusion power modules. In contrast, the Wi-Fi connection via the u-blox NINA chipset on the Arduino has demonstrated stable communication even during full-load tests.

Please note that while the tool is compatible with the open-source Arduino toolchain, including integration with the latest MATLAB/Simulink toolboxes, Infineon does not provide active support for this type of operation.

Table 6 Pin Mapping to Arduino Nano

Singal type	Gate Driver Board Power Module Switch	Arduino Pin	Arduino Nano 33 IoT Module
PWM	Lowside Phase U (SYS2)	D6	TCC0 / WO[0]
PWM	Highside Phase U (SYS1)	D2	TCC0 / WO[4]
PWM	Lowside Phase U (SYS4)	D8	TCC0 / WO[2]
PWM	Highside Phase U (SYS3)	D9	TCC0 / WO[6]
PWM	Lowside Phase U (SYS6)	D16	TCC0 / WO[3]
PWM	Highside Phase U (SYS5)	D10	TCC0 / WO[7]
EN	Enable/Reset (SI1|SI2)	D5	GPIO (output)
FLT	nFLT	D21	GPIO (input); INT[3] falling edge
DATA	DATA of lowside gate driver Default connected to SYS6	D7	TC5
DATA	DATA of highside gate driver Default connected to SYS5	D15	TC4
SPI	Isolated ADC for DC-Link voltage measurement	D13 SCK D12 SDO (CIPO) Not used D11 SDI (COPI) D4 CS	SPI with D4 for CS D4 is connected to TCC1/WO[1] module. A falling edge triggers sample and hold for the HV side ADC
ADC	Analog Signal of Current Sensor Aout Phase U	A6	AIN[17]
ADC	Analog Signal of Current Sensor Aout Phase V	A3	AIN[18]
ADC	Analog Signal of Current Sensor Aout Phase W	A0	AIN[0]
ADC	Analog Signal of Current Sensor Vref Phase W	AREF	AREF/AIN[1]
Memory	Non volatile FRAM I2C	I2C	

3.7 Phase Current Sensor DCDI communication interface

The DCDI communication is implemented in the evaluation kits like shown in the following figure. The parallel connected Microcontroller ports have a serial resistor, which can limit the device currents in case of wrong software settings. For more information please refer to the product datasheets and manuals of the TLE4973 sensors.

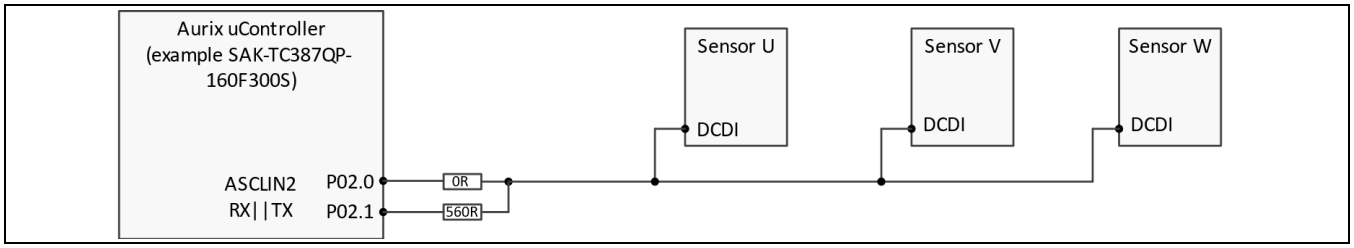

Figure 8 The sensor DCDI communication interface hardware connection in the evaluation kits. Extract of DCDI communication bus only. The parts require appropriate supply and common ground connection.

4 Quickstart Guide

This chapter provides a basic introduction to the most common use cases for laboratory testing. Please note that the evaluation kits are designed to operate with high voltages and high currents, and therefore requires experienced personnel with a background in power electronics to perform testing.

4.1 Double Pulse Tests

To perform double pulse tests, a suitable DC-Link capacitor must be connected to the power module. The required connections for a double pulse test are illustrated in Figure 9. For tests involving elevated junction temperatures, the power module can be mounted on a heat plate. Additionally, a cooling fan may be necessary for the gate driver board and DC-Link capacitor during high-temperature tests to prevent overheating.

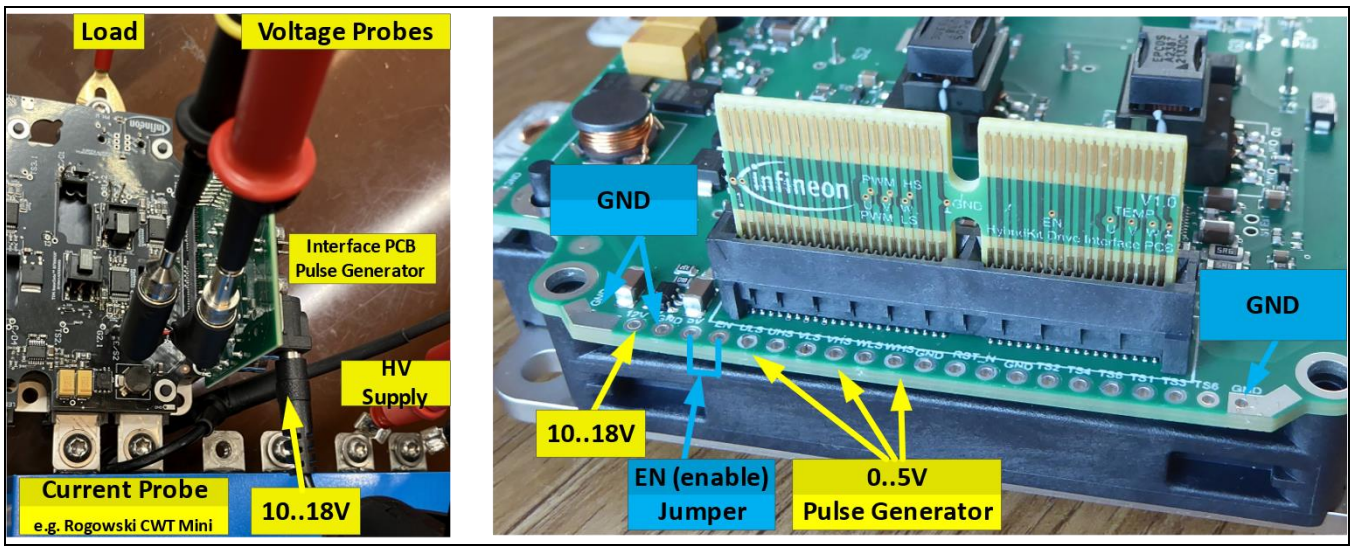

Figure 9 Typical Double Pulse test setup. Left picture with Interface PCB: "EV PCB INT" or right picture where signals are applied direct at the gate driver board test vias.

In order to start the test, the following sequence has to be applied. The signal pattern is also illustrated in Figure 10:

- Connect the module to DC-Link capacitor
- Connect the air coil or inductive load
- Connect a 12 V supply to the gate driver board
- Connect the high voltage supply to the DC-Link capacitor

1. Apply a 10 V to 18 V supply to the gate driver board (status LED indicate OK)
2. Connect EN (ENable: SI1|SI2 of the gate driver pins) to GND and then to 5 V (continuous). The rising EN edge clears errors.
   Please note that all PWM inputs have to be 0V during the EN rising edge otherwise the gate driver will lock the operation as it is not allowed to clear errors during a on-state command at the same time.
3. Enable the high voltage supply and charge the DC-Link capacitor to required voltage for the test
4. Pulses:
   - Apply pulses with 0 V low level and 5 V high level to PWM_X (one of the 6 switches)
   - In case of a DESAT (short circuit) detection event (see LED 4 and 5 OFF) the EN has to be toggled again during PWM off commant to clear errors for continuation of pulse tests.
5. Disable HV supply and discharge DC-Link capacitor

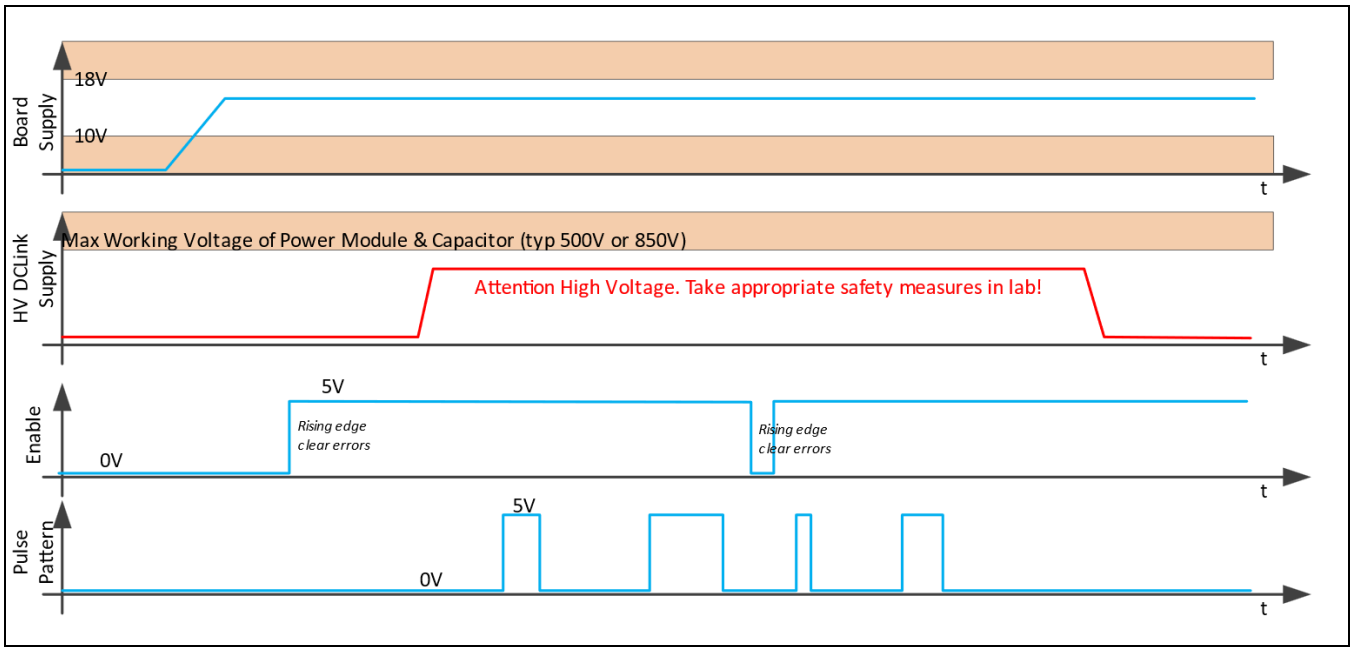

Figure 10 Typical "Double Pulse" or pulse sequence signal pattern. A rising EN edge clears errors, when PWM command is low at this edge.

4.2 Inverter Mode Tests

For information about inverter mode testing, flashing a new software into logicboards, adjustment of parameters like phase current sensor calibration please refer to the Quickstart Guide for Inverter Evaluation Kit (AN-G2-KITQUICKSTART) [3].

5 References and Revision History

The referenced application notes can be found at http://www.infineon.com

[1] Infineon Application Note AN-G2-ASSEMBLY, “Assembly Instructions for the HybridPACK™ Drive G2 power modules”.

[2] Infineon Application Note AN-G2-SICSC, “Automotive SiC MOSFET G2 short circuit detection and turn-off with 1EDI3035AS gate driver”.

[3] Infineon Application Note AN-G2-KITQUICKSTART, “Quickstart Guide for Inverter Evaluation Kit. Inverter Evaluation Kit for HybridPACK™ Drive G2 Power Modules”.

[4] Peak-Systems, https://www.peak-system.com/

Revision History

Date	Version	Changed By	Change Description
2024-07	1.0	T. Reiter	initial Version
2025-04	1.1	T. Reiter	Added evaluation tools for Si/SiC Fusion power modules. Updated pictures.

Edition <2025-04-09>

Published by

Infineon Technologies AG

81726 Munich, Germany

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Document reference

AN-G2-EVALTOOLS

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