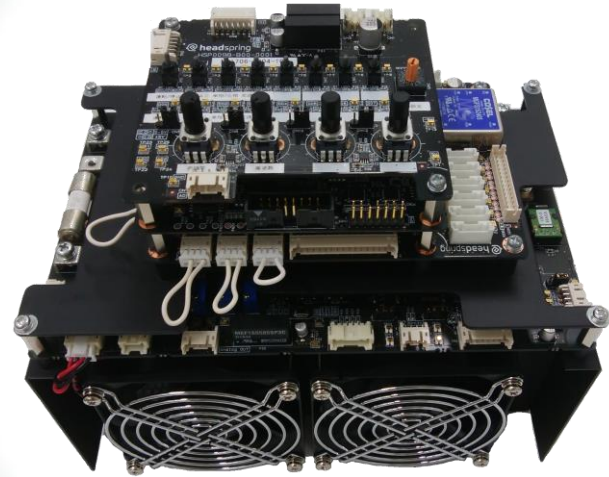


## Experimental Kit

## Three Phase Inverter with GaN Device

# HEK-INV-C

## GaN Inverter Testing Kit



### Overview

- Integrated development platform product with sample software included.
- Formed by GaN 3-phase inverter unit, controller, operation board, power controlling purpose switching source
- Setting adjustable software sample are pre-loaded in the controller, and workable with controlled source input. (AC100V)
- Connection between Platform are hard-wired to match with the sample software
- Sample software including source code

### Features

#### **MHz switching is possible with the GaN equipped power device**

- ✓ Suitable for high frequency drive testing, ie: Contactless power supply ,pulse generator and etc

#### **3-phase Inverter with Controller and Operation Board**

- ✓ Easy to use just by connecting to power source and Load
- ✓ A compact and space-saving design

#### **Various Circuit Topologies and Parameter Available**

- ✓ Switchable operation between Chopper, 1-phase inverter, 3-phase inverter
- ✓ Switching frequency, dead-time, modulation ratio, output frequency can be modified by setting of toggle SW and Volume

#### **Easy Customization of Software and External Option**

- ✓ Software can be modified dynamically if used along with a separate Development Support Kit "HSDT-KIT-B"
- ✓ Software customization or External RL customization can be made based on requirement

Specification (Model: HEK-INV-C)

Subject	Specification	Notes
DC Voltage Range	0 V - 400 V	P-N Port
Maximum AC Current	12 Arms	U, V, W Port
Maximum Switching Frequency	1.5MHz (5MHz)	Can choose up to 1.5MHz w/ Rotary Switch. Along with HSDT-KIT-B, can drive until 5MHz
Minimum Dead-time	30 ns	Modified w/ Rotary Switch
Operational Switch	Toggle SW: 8 ch Rotary SW: 1 ch	
Display LED	Yellow : 8 ch Red : 4 ch Green : 5 ch	
Operation Mode	Chopper 1-phase Inverter 3-phase Inverter	Selected by Switch
Protection	AC Overcurrent DC Overvoltage	Threshold to be modified with variable Resister
Power Supply	AC100 V	
Size	W 209mm D 130mm H 186mm	Combining 3-phase inverter and controller board
Weight	2.35kg	

Operational Parameter

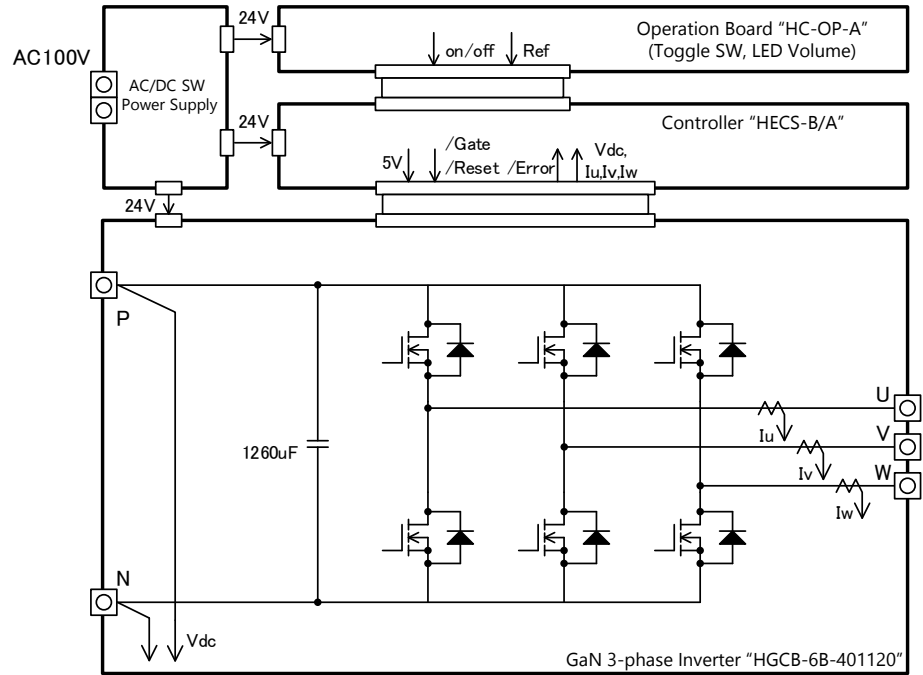
Parameters	Description	Notes
Start/Stop	Gate Signal Output Control	
Topologies	Chopper/Inverter	U port for Chopper
	1-phase / 3-phase	U, V Port for 1-phase Output
Modulation	Unipolar Modulation / Bipolar Modulation	For 1-phase output
	Triangular wave carrier comparison modulation / Spatial Vector Modulation	For 3-phase Output
Switching Frequency	20 kHz – 1.5 MHz	Changeable to Rotary Switching
Dead-time	30 ns	※Refer to other document
Modulation Ratio	0~1	
Inverter Output Frequency	50Hz~500Hz	

Switching Frequency / Dead time Setting

Switching Frequency	Dead-time	Switching Frequency	Dead-time
20kHz	30ns	600kHz	30ns
50kHz	30ns	800kHz	30ns
100kHz	30ns	1MHz	30ns
125kHz	30ns	1.1MHz	30ns
150kHz	30ns	1.2MHz	30ns
175kHz	30ns	1.3MHz	30ns
200kHz	30ns	1.4MHz	30ns
400kHz	30ns	1.5MHz	30ns

Spec might changed without any prior notice

Block Diagram



\* As of June/2019  
\* Specification and design subject to change without notice